


For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex LIBRIS
UNIVERSITATIS
ALBERTAENSIS





Digitized by the Internet Archive
in 2023 with funding from
University of Alberta Library

<https://archive.org/details/Sackney1976>

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR	Lawrence Ernest Sackney
TITLE OF THESIS	The Relationship between Organizational Structure and Behavior in Secondary Schools
DEGREE FOR WHICH THESIS WAS PRESENTED	Doctor of Philosophy
YEAR THIS DEGREE GRANTED	1976

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

THE UNIVERSITY OF ALBERTA

THE RELATIONSHIP BETWEEN ORGANIZATIONAL STRUCTURE
AND BEHAVIOR IN SECONDARY SCHOOLS

by



LAWRENCE ERNEST SACKNEY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

FALL, 1976

THE UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Relationship between Organizational Structure and Behavior in Secondary Schools," submitted by Lawrence Ernest Sackney in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Educational Administration.

ABSTRACT

The purpose of this study was to investigate the relationships among organizational structure and selected behavioral variables in secondary schools. In addition, the suitability of the Aston methodology for analyzing organizational structures of secondary schools was assessed.

The theoretical position of this study was that secondary schools have identifiable structural characteristics. These structures in turn affect the behavior of people within the school. How people behave within the structure of the organization is affected by the organizational control patterns and the expectations of other people with whom they work.

This study was a quantitative case study of forty secondary schools in Manitoba and Saskatchewan. Data for the structural measures were collected by means of a modified Aston Interview Schedule. Measures on the behavioral variables were obtained through the Organizational Climate Description Questionnaire (OCDQ). The OCDQ was completed by 1,350 staff members. Ten structural, nine contextual and eight teacher-principal behavior variables formed the dimensions examined in a multivariate analysis.

Relatively wide differences were found among the secondary schools on the structural variable scores. When the set of items for each scale was submitted to item analysis, the results showed higher correlations than those obtained by the Aston studies.

Three structural factors, Dispersion of Authority, Standardization, and Nonworkflow Proportion were found to be the

underlying dimensions of structure. These factors were considered as being different from those obtained in the original Aston and consequent college studies. However, the secondary school and college factor patterns showed more discrete factor loadings.

Two modes of administrative control were discerned: (a) maintenance of control directly by confining decisions to outside the school, or (b) maintenance of control indirectly by relying on the use of procedures, records and additional supervisory personnel. Size was the major predictor of extent of decentralization. Urban schools with larger number of pupils tended to have greater decision making discretion as schools.

Other rural-urban differences were also found. Rural schools tended to have a greater amount of standardization, manpower turnover, aloofness, production emphasis, but a lower amount of specialization and esprit compared to urban schools.

This study found that secondary schools with higher specialization, higher documentation, lower standardization and lower centralization tended to have teachers with higher morale (esprit). Teachers also preferred principals who tended to be perceived as being personal and informal (low aloofness) and who did not supervise their performance closely (low production emphasis). Specialization was the best predictor of the extent of esprit. Theoretically it was concluded that structure does affect to a certain extent the behavior of organizational members.

The Aston methodology was deemed to be appropriate for the measurement of organizational structure in small organizations serving a similar charter.

ACKNOWLEDGEMENTS

I should like to acknowledge the financial assistance provided by the Canada Council in the form of a Doctoral Fellowship during the two years of study.

Thanks are expressed to the superintendents, principals, and teachers of Saskatchewan and Manitoba who participated in this study.

My supervisor, Dr. D. Friesen, provided me with sympathetic hearings, and perceptive suggestions and criticisms which made him a most approachable and rewarding supervisor. The searching questions and assistance in the formulative stages of Dr. R. P. Heron and the meticulous review of the later stages by Dr. E. A. Holdaway were of great value, as was their encouragement throughout. My thanks are also due to Dr. E. Ingram, Dr. E. Seger and Dr. R. W. Myers for their kindness in consenting to serve on my committee and for their perceptive and constructive comments. Mrs. C. Prokop provided invaluable assistance in the computer analysis and Mrs. M. Voice typed the manuscript with cheerful efficiency.

My sincerest appreciation to Kathleen—the writer's closest partner in this endeavor—for her understanding, encouragement and for again making all things possible. To my children, Blair and Leanne, for putting up with so much for such a long time, my most heartfelt thanks.

TABLE OF CONTENTS

Chapter	Page
1. INTRODUCTION	1
THE STUDY	2
Purpose	2
Significance	3
Limitations and Delimitations	4
Assumptions	4
ORGANIZATIONAL STRUCTURE	5
THE CONTEXT OF STRUCTURE	6
STRUCTURE AND ORGANIZATIONAL BEHAVIOR	7
OUTLINE OF THE STUDY	8
2. RELEVANT LITERATURE AND CONCEPTUAL FRAMEWORK	9
ORGANIZATIONAL STRUCTURE	9
Weberian Bureaucracy	9
Approaches to Study and Research on Bureaucracy	11
Bureaucratic Structures of Schools	14
THE ASTON STUDIES	15
Structural Variables and Dimensions	16
The Aston Contextual Variables	19
Replication of the Aston Studies Using the Abbreviated Form	21
Aston Studies on Similar Organizations	24
STRUCTURE AND ORGANIZATIONAL BEHAVIOR	26
Empirical Studies	26

Chapter	Page
Organizational Climate Description Questionnaire	29
CONCEPTUAL FRAMEWORK	31
SUMMARY	35
3. ELABORATION OF THE PROBLEM AND DEFINITION OF TERMS . .	38
THE PROBLEM	38
Sub-problems	38
DEFINITION OF TERMS	39
Organizational Structure	40
Structural Variables	40
Contextual Variables	41
Aston Structural Variables	42
Organizational Behavior	43
Behavior Variables	43
Secondary School	44
4. INSTRUMENTATION AND METHODOLOGY	45
THE INSTRUMENTS	45
Interview Schedule	45
Organizational Climate Description Questionnaire (OCDQ)	49
THE SAMPLE	52
THE DATA	54
DATA ANALYSES	57
Item Analysis	57
Further Analyses	59
Correlation Coefficients	61

Chapter		Page
5.	ORGANIZATIONAL STRUCTURE IN FORTY SECONDARY SCHOOLS	62
	STRUCTURAL VARIABLES	62
	RELATIONSHIPS AMONG STRUCTURAL VARIABLES	64
	FACTOR ANALYSIS OF STRUCTURAL VARIABLES	68
	COMPARISON WITH ASTON FACTORS	71
	COMPARISON WITH COLLEGE FACTORS	73
	STRUCTURAL FACTOR SCORES	78
	SUMMARY	80
6.	THE RELATIONSHIPS OF CONTEXT AND ORGANIZATIONAL BEHAVIOR IN FORTY SECONDARY SCHOOLS	82
	CONTEXTUAL VARIABLES	82
	Intercorrelations of Contextual Variables	82
	Normalized Contextual Scores	86
	BEHAVIOR VARIABLES	86
	Behavioral Standard Scores	90
	RELATIONSHIP BETWEEN CONTEXT AND BEHAVIOR	92
	Continuous Contextual Variables	92
	Dichotomous Contextual Variables	94
	SUMMARY	96
7.	RELATIONSHIPS OF STRUCTURE AND CONTEXT IN FORTY SECONDARY SCHOOLS	98
	RELATIONSHIPS BETWEEN STRUCTURAL VARIABLES AND CONTEXTUAL VARIABLES	98
	Continuous Contextual Variables	98
	Dichotomous Contextual Variables	101
	RELATIONSHIPS BETWEEN STRUCTURAL FACTORS AND CONTEXTUAL VARIABLES	103

Chapter	Page
SUMMARY	106
8. RELATIONSHIPS OF STRUCTURE AND BEHAVIOR IN FORTY SECONDARY SCHOOLS	108
RELATIONSHIPS BETWEEN STRUCTURAL VARIABLES AND BEHAVIORAL VARIABLES	108
RELATIONSHIPS BETWEEN STRUCTURAL FACTORS AND BEHAVIORAL VARIABLES	113
SUMMARY	115
9. SUMMARY, CONCLUSIONS AND IMPLICATIONS	117
SUMMARY	117
Conceptual Framework	118
Methodology	118
Structure	120
Context and Organizational Behavior	122
Structure and Context	123
Structure and Behavior	124
MAJOR CONCLUSIONS AND THEIR IMPLICATIONS	125
Theoretical Conclusions and Implications for Further Research	125
Methodology and Implications for Further Research	130
Implications for Practice	132
BIBLIOGRAPHY	134
APPENDIX A. ADAPTED ASTON INTERVIEW SCHEDULE ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE	151
APPENDIX B. RAW DATA	182

LIST OF TABLES

Table	Page
1. SCHEME FOR EMPIRICAL STUDY OF SECONDARY SCHOOLS	34
2. COMPARISON OF SAMPLE AND POPULATION ON A NUMBER OF MEASURES	53
3. SUMMARY OF STAFF SIZES AND PERCENTAGE RESPONSES TO OCDQ	56
4. SUMMARY OF ITEM ANALYSIS RESULTS	58
5. MEANS, STANDARD DEVIATIONS AND RANGES FOR STRUCTURAL VARIABLES (N = 40)	63
6. NORMALIZED STANDARD SCORES ON STRUCTURAL VARIABLES FOR THE SAMPLE	65
7. PRODUCT-MOMENT CORRELATIONS BETWEEN VARIABLES OF STRUCTURE (N = 40)	66
8. FACTOR ANALYSIS OF EIGHT STRUCTURAL VARIABLES	69
9. ASTON FACTOR ANALYSIS OF TEN STRUCTURAL VARIABLES	72
10. COLLEGE FACTOR ANALYSIS OF TEN STRUCTURAL VARIABLES	74
11. FACTOR ANALYSIS OF TEN STRUCTURAL VARIABLES	76
12. STRUCTURAL FACTOR SCORES	79
13. PRODUCT-MOMENT CORRELATIONS BETWEEN CONTINUOUS VARIABLES OF CONTEXT (N = 40)	83
14. BROGDEN CORRELATION COEFFICIENTS BETWEEN DICHOTOMOUS AND CONTINUOUS CONTEXTUAL VARIABLES (N = 40)	84
15. NORMALIZED STANDARD SCORES ON CONTEXTUAL VARIABLES	87
16. PRODUCT-MOMENT CORRELATIONS BETWEEN VARIABLES OF BEHAVIOR (N = 40)	88

Table	Page
17. NORMALIZED STANDARD SCORES ON BEHAVIOR VARIABLES FOR THE SAMPLE	91
18. PRODUCT-MOMENT CORRELATIONS BETWEEN CONTINUOUS CONTEXTUAL VARIABLES AND BEHAVIORAL VARIABLES (N = 40)	93
19. BROGDEN CORRELATION COEFFICIENTS BETWEEN DICHOTOMOUS AND BEHAVIOR VARIABLES (N = 40)	95
20. PRODUCT-MOMENT CORRELATIONS BETWEEN STRUCTURAL VARIABLES AND CONTINUOUS CONTEXTUAL VARIABLES (N = 40)	99
21. BROGDEN CORRELATION COEFFICIENTS BETWEEN STRUCTURAL VARIABLES AND DICHOTOMOUS CONTEXTUAL VARIABLES (N = 40)	102
22. PRODUCT-MOMENT CORRELATION COEFFICIENTS BETWEEN STRUCTURAL DIMENSIONS AND CONTINUOUS CONTEXTUAL VARIABLES (N = 40)	104
23. BROGDEN CORRELATION COEFFICIENTS BETWEEN STRUCTURAL DIMENSIONS AND DICHOTOMOUS CONTEXTUAL VARIABLES (N = 40)	105
24. PRODUCT-MOMENT CORRELATIONS BETWEEN STRUCTURAL VARIABLES AND BEHAVIORAL VARIABLES (N = 40)	109
25. PRODUCT-MOMENT CORRELATION COEFFICIENTS BETWEEN STRUCTURAL DIMENSIONS AND BEHAVIORAL VARIABLES (N = 40)	114
26. RAW SCORES OF SCHOOLS ON STRUCTURAL VARIABLES	183
27. RAW SCORES ON CONTEXTUAL VARIABLES FOR THE SAMPLE	184
28. RAW SUBSCALE SCORES ON BEHAVIORAL VARIABLES FOR THE SAMPLE	185

LIST OF FIGURES

Figure	Page
1. INTERCORRELATIONS OF BEHAVIORAL VARIABLES	89

Chapter 1

INTRODUCTION

Comparative studies of formal organizations have been predominant characteristics of organizational research since Weber's (1947) formulation of the concept of the "ideal type" bureaucracy. However, in Udy's view (1965:678), the question faced by researchers involved in comparative studies has been "which characteristics of the organizations can be compared?"

Heady (1959:519) had also addressed the question of the applicability of the concepts used to measure bureaucracy. He claimed that there was considerable agreement on the basic structural characteristics of bureaucracy, but that there was much less certainty as to the behavioral traits associated with it. According to Heady (1959:521), the usual description of bureaucracy implied "that the various components of the structure or the behavior are always found together, that they are harmonious parts of a whole." Heady (1959:523) suggested that bureaucracy should be defined in terms of certain essential structural characteristics that are already generally accepted and understood, and that research on behavior in bureaucratic organizations be carried out with a view of eventually developing a classification of organizations based on variations in organizational behavior. This approach would get around the dilemma of having to decide which behavior is "more bureaucratic" and which is "less bureaucratic."

According to Heady (1959:523): "By making the structural aspect central to the concept of bureaucracy, we can provide a conceptual framework on which there is already a substantial measure of agreement."

Pugh et al. (1963) followed Heady's suggestion and conceptualized six elements to be considered as dimensions of organizational structure. As a result of the Aston studies (Pugh et al., 1968a; 1968b; 1969a; 1969b), Holdaway et al. (1975:371) claimed that "evidence is accumulating to support the contention that organizational structure provides one of the several sets of those characteristics" required for comparative analysis.

This study examined whether the Aston methodology was applicable to the study of structure in secondary schools and the extent of relationships between dimensions of structure and certain behavioral variables.

THE STUDY

Purpose

Theoreticians and researchers have recognized that the structure of organizations is influenced by variables both within the organization and in the task environment. However, researchers have frequently investigated the relationships of a single variable such as size or age to organizational structure. But they have not attempted to relate organizational structure and group behavior in any systematic way. Such studies would require the utilization of a multidimensional approach. Researchers have also emphasized that

in-depth studies of specific types of organizations are required and that methodologies should be devised and tested to permit such examination.

The purposes, therefore, of this study were (1) to describe the organizational structures of selected secondary schools in Manitoba and Saskatchewan, (2) to investigate the relationships between structure and certain teacher-principal behavioral variables, and (3) to assess the appropriateness of the Aston methodology for the measurement of structure in small educational organizations.

Significance

This study was expected to make a number of contributions to the study of educational organizations. One contribution of the present study was that of furthering comprehensive multidimensional analysis of the interrelationships between organizational structure and variables influencing structure in educational institutions.

Also of importance is the question of the extent to which organizational studies in the industrial and government service sectors are applicable to a particular educational setting. Although previous research (Heron, 1972; Holdaway et al., 1975) had demonstrated the applicability of the methodology for colleges, its utility for public schools has not been established.

Additionally, this study represented an initial attempt in using the secondary school as the level of analysis to relate behavior of members to organizational structure. Ultimately the multidimensional approach could lead to the development of a classification of organizations based on types of behavior.

Finally, the comparative perspective has been slow to develop in educational administration. Sarason (1971:229) contends that studies to the present time have not provided a wholly acceptable tool for the comparative analysis of schools as organizations. This study perhaps may help to make a contribution towards filling this gap.

The general purpose and anticipated contributions served as objectives which guided the development of the study.

Limitations and Delimitations

This study was limited to the Aston methodology, to the data collection and quantification schedules as modified from the Aston Interview Schedule, and to the attainment of appropriate records and documents. The data collected were specific only to those secondary schools examined. The study was further limited to the usage of the Organizational Climate Description Questionnaire (OCDQ) as a means of describing the behavior of teachers and principals within secondary schools.

This study was delimited to ten structural variables and seven contextual variables as defined in the Aston studies (Pugh et al., 1968b; 1969a) and eight behavioral variables as described by Halpin and Croft (1963). The sample consisted of forty secondary schools located in Manitoba and Saskatchewan.

Assumptions

This study assumed that secondary schools as formal organizations can be described, in part, by certain components which are always present to a greater or lesser extent. Each secondary

school was assumed to be engaged in the formal non-voluntary education of students. As such, each school functioned under (a) fixed and official jurisdictional areas, (b) principles of hierarchy and levels of graded authority, and (c) an administration based upon written documents, the presence of full-time officials, and general rules and regulations. Each secondary school was also assumed to function independently of other secondary schools but under the same enabling legislation. Finally, it was assumed that administrators who were interviewed had the required information, and in addition, that teachers who completed the Organizational Climate Description Questionnaire did so with sincerity.

ORGANIZATIONAL STRUCTURE

All human organizations which are goal-directed perform certain functions and thus are characterized by certain common processes. Katz and Kahn (1966:86) claim that organizations engage in at least six main types of processes: production activities, resource acquisition activities, support activities, managerial activities, adaptive activities, and legitimizing activities. In order for such an array of activities to be performed, some form of division of labor, the allocation of decision making power, and standardization of procedures tends to develop. The dimension through which such processes can be directed and controlled to produce patterned activity can be called "structure."

"Organizational structure" has been defined in slightly differing ways. Thompson (1967:51) defined structure as the internal

differentiation of functions and rules and the patterning of relationships among roles. March and Simon (1958:170) stated that "Organization structure consists simply of those aspects of the pattern of behavior in the organization that are relatively stable and that change only slowly." Pugh and Hickson (1968a:1) defined structure as "regularities in activities such as task allocation, supervision and coordination." While there are slight variations in definitions, Holdaway et al. (1975:35) contend that "there is general agreement that structure refers to those deliberate patterns of relationships in organizations."

This study, like that of Pugh et al. (1963), Newberry (1971), Heron (1972), Kelsey (1973) and Holdaway et al. (1975), emphasized the following Weberian structural dimensions:

1. Authority Structure is the locus of decision making.
 2. Rules regulate and increase the predictability of behavior.
 3. Standardized procedures routinize recurring activities.
 4. Formalization of decisions, rules and orders increases predictability.
- These dimensions provided a general orientation to the concept of structure and have been elaborated in Chapters 2 and 3.

THE CONTEXT OF STRUCTURE

Organizations exist and function within an environment which presents contingencies and imposes constraints. Characteristics which are internal to the organization itself influence its structure.

However, to identify, define and measure important variables

in an organization's environment are formidable tasks. It is perhaps because of this that those studies which have dealt with the environment of organizations have usually restricted themselves to the measurement of easily identifiable items such as size (Blau and Schoenherr, 1971), extent of a firm's market and sources of supply (Lawrence and Lorsch, 1969), or technical changes in industry which it represents (Emery and Trist, 1965).

Consequently, the organic-mechanistic stereotype of Burns and Stalker (1961) illustrates structural variations within organizations. The technological-implications approach represented by Woodward (1958), Perrow (1972) and others, consider technology to be a major determinant of organizational structure.

For the purposes of this study, characteristics such as those listed above were defined as forming the context of structure.

STRUCTURE AND ORGANIZATIONAL BEHAVIOR

Recognizing the heuristic value of Weber's concept of bureaucracy, various writers have attempted to develop theoretical models relating the structural patterns of organizations to the behavior and personality of organizational members (e.g., the Getzels-Guba model with its idiographic-nomothetic dimensions). Basic to their theories has been the belief that bureaucratic structures do have an impact on the way organizational participants carry out their duties. According to MacKay (1964:5), "the very usefulness of research into organizational structure depends upon the existence of relationships between behavioral factors and structure."

While recognizing that there are many kinds of behaviors to be investigated, for the purposes of this study, organizational behavior was limited to those dimensions conceptualized by Halpin and Croft (1963). Their instrument was multidimensional in nature and consisted of eight subtests (four describing teacher behavior and four describing principal behavior). The teacher subtests were disengagement, hindrance, esprit and intimacy, whereas the principal subtests were aloofness, production emphasis, thrust and consideration.

OUTLINE OF THE STUDY

The related literature and theoretical framework are reviewed in Chapter 2 under the topics of structure, context, and organizational behavior. Chapter 3 includes the development of the problem, sub-problems and definitions. The methodology employed in the data collection and analysis is discussed in Chapter 4. The findings regarding structure, context, behavior, relationships of structure and context, and relationships of structure and organizational behavior are presented in Chapters 5, 6, 7 and 8 respectively. The final chapter contains a summary of the study, the conclusions, implications for practice, and recommendations for further research.

Chapter 2

RELEVANT LITERATURE AND CONCEPTUAL FRAMEWORK

This chapter presents the review of the literature from which the conceptual framework is derived. Consequently, it includes a discussion of Weber's conceptualization of bureaucracy, a discussion of the approaches and research on organizational structure, a description of the Aston studies, a discussion of the contextual and behavioral variables that are believed to be related to structure, and a summary of the research conducted on organizational structures in educational organizations.

ORGANIZATIONAL STRUCTURE

Weberian Bureaucracy

The insights and formulations of Weber (1947) underlie much of the work on structure. Weber (1947:333-334) outlined ten imperatives of bureaucracy which described formal organizations as arising from an "ideal type" construct. Basic to the ideal type is the assumption of the rationality of social behavior. This assumption is implicit in the following Weberian imperatives (Weber, 1947: 333-334):

1. They [administrative employees] are personally free and subject to authority only with respect to their impersonal and official obligations.
2. They are organized in a clearly defined hierarchy of office.
3. Each office has a clearly defined sphere of competence in a legal sense.

4. The office is filled by a free contractual relationship.
5. Candidates are selected on the basis of technical qualifications. In the most rational case, this is tested by examination or guaranteed by diploma certifying technical training, or both. They are appointed, not elected.
6. They are remunerated by fixed salary in money, for the most part with a right to pensions. . . .
7. The office is treated as the sole, or at least primary occupation of the incumbent.
8. It constitutes a career. There is a system of 'promotion' according to seniority and achievement, or both. Promotion is dependent upon the judgment of superiors.
9. The official works entirely separated from the ownership of the means of administration and without appropriation of his position.
10. He is subject to strict and systematic discipline and control in the conduct of his office.

Weber (1952:24) further stated that:

. . . the purely bureaucratic type of administrative organization . . . is, from a purely technical point of view, capable of attaining the highest degree of efficiency and is in this sense formally the most rational known means of carrying out imperative control over human beings. It is superior to any other form in precision, in stability, in the stringency of discipline, and in its reliability.

According to Secher (1962:14), Weber was mainly concerned with the rationality and efficiency of his ideal-type, recognizing that it would be difficult for any organization to duplicate this ideal.

The imperatives that Weber conceptualized were mainly related to administrative structure, and paid little attention to the role incumbents. This disregard of the informal, interpersonal and personal dimensions, to be discussed later, was regarded as weaknesses of Weber's formulation by the humanists. However, this

reaction against the Weberian imperatives also resulted in a view of the dynamic nature of bureaucracy.

Approaches to Study and Research on Bureaucracy

Until recently, there were two main approaches to the study of bureaucracy in organizations. However, a newer approach, grounded in empirical research, appears to have supplanted the earlier one.

Early approaches. The early approaches to the study of bureaucracy used Weber's formulations as a yardstick. Initially, organizations were examined to determine the extent to which they possessed or did not possess bureaucratic characteristics. The discrepancies that were found between the organizations studied, and those of the ideal type, led to the postulation of new ideal types. Thus Gouldner (1954) developed the concept of "mock," "representative," and "punishment centered" bureaucracies, Gerth (1952) that of the "charismatic" bureaucracy, and Presthus (1961) that of the "welfare" bureaucracy.

The second approach entailed a comparison between the observed functioning of organizations and that of the ideal type. These studies (e.g., Gouldner, 1954; Merton, 1952) pointed out the possible effects of the unintended consequences of bureaucracy, or its "dysfunctions."

These early endeavors in bureaucracy implied two things: first, that bureaucracy is present or absent in an organization (or, in some cases a modified form existed), and second, that bureaucracy is a unitary concept and that the Weberian characteristics vary

together. Pugh et al. (1963:95) contend that both of these implications have come to be questioned. First, organizations may vary in the extent to which they exhibit bureaucratic characteristics (i.e., in the extent to which they are "bureaucratized"), and second, that bureaucracy is not a unitary concept as it was previously thought to be.

Dimensional studies of bureaucracy. Researchers utilizing the newer approach, rather than classifying organizations as bureaucratic or non-bureaucratic, conceptualized the characteristics of bureaucratic organizations as dimensions and then described organizations in terms of a set of dimensions. These dimensions form several continua, of which a number may vary together.

Empirical evidence on the multidimensional nature of bureaucracy has accumulated over a period of time. Udy (1959), working with data from the Human Relations Area Files in the United States, suggested that there was not only a lack of correlation between some elements of bureaucracy, but that there was a negative correlation between hierarchical forms and some elements characteristic of a rational, task-oriented organization.

Hall (1963a:32) recognized the weaknesses of studying bureaucracy in terms of comparisons to Weber's ideal type. For him, a more realistic approach was to utilize the Weberian imperatives, and ". . . to treat organizations as possessing characteristics of the bureaucratic model in varying degrees along the several dimensions of bureaucracy" (Hall, 1972:67).

He designed the Organizational Inventory instrument which

measured six dimensions of bureaucracy, based on the frequency of citation and theoretical importance. The six dimensions are: (1) Hierarchy of Authority, (2) Division of Labour, (3) Rules for Incumbents, (4) Procedural Specifications, (5) Impersonality, and (6) Technical Competency.

The dimensions were measured by means of Likert-type scales comprising sixty-two items. After administering the instrument to employees in ten organizations, Hall (1963a:36-37) concluded that each dimension ranged along a continuum, that the dimensions were independent, that hierarchy of authority was a key variable, that technical competence was negatively related to the other dimensions, that age and size were not highly related to the degree of bureaucratization, and that bureaucracy should be viewed as "matter of degree rather than of kind" (1963a:37).

In a study conducted to determine the distribution of power in health and welfare organizations, Hage and Aiken (1967) found that five factors arose from the Hall scales. Factor analysis produced one measure of hierarchy of authority and two measures of formalization (job codification and rule observation). Complexity was indicated by three measures (occupational specialties, degree of professional training and amount of professional activity). Hage and Aiken (1967: 90) concluded that ". . . complex organizations are more likely to be decentralized, . . . while formal organizations are more likely to be centralized." In these terms, complex organizations can be termed "professional" organizations while formal organizations can be termed "hierarchical."

Heron (1972:37-38) in an analysis of the study claimed that the Hage and Aiken usage of the Hall approach seemed "to strengthen the argument that the approach describes the activities and qualities of individuals in the organization rather than the organization itself." He contended that the approach was more applicable to functional rather than to structural analyses.

Heady (1959) also questioned whether all of the characteristics of Weber's ideal type are structural elements. He contended that they can be considered as falling into three categories: structural, behavioral and purposive. Pugh et al. (1968b) made the distinction in an examination of purely structural elements in a diverse sample of work organizations.

Bureaucratic Structures of Schools

The studies which focus on the bureaucratic dimensions of school structure all base their measurement on the same instrument, Hall's (1961) Organizational Inventory. In each instance, one of the two adaptations of the instrument is used, that by MacKay (1964) or that by Punch (1967).

The purpose of the school studies using the Organizational Inventory has usually been to examine bureaucratic characteristics of schools in relation to some behavioral or personality variables—professionalism (Robinson, 1966), student alienation (Kolesar, 1967), communication (Mansfield, 1967), teacher personality and needs satisfaction (Gosine, 1970), and leader behavior (Punch, 1967).

MacKay's analysis (1964:167) led him to regard three dimensions (hierarchy, rules, procedural specification) as most

descriptive of bureaucratic organizations, and one (technical competence) as an "abureaucratic" dimension. Robinson (1966) obtained similar results. Kolesar's (1967) factor analysis of the instrument resulted in two distinct dimensions, "authority" and "expertise." Punch (1967) refined the instrument further and obtained results similar to those of Kolesar. Gosine (1970) used Punch's findings and defined bureaucracy in terms of the four unitary dimensions (authority, rules, procedural specifications and impersonality).

Punch (1969:53) in a later article, concluded that bureaucracy cannot be usefully regarded as a unitary concept unless it is restricted to include only specific dimensions (hierarchy of authority, procedural specifications, rules and impersonality).

THE ASTON STUDIES

The Pugh et al. studies (1968b, 1969a), have become known as the "Aston studies" because of the authors' association with the University of Aston in Birmingham, England. The overall objective of the Aston studies was to examine the relationship between organizational structure and personal behavior (at group and individual levels) in organizations. As Pugh et al. (1963:292) state:

We are concerned with the attempt to generalize and develop the study of work organizations and behavior into a consideration of the interdependence of three conceptually distinct levels of analysis of behaviour in organizations: (1) organizational structure and functioning, (2) group composition and interaction, and (3) individual personality and behaviour.

The first step was "to develop an empirically-based multidimensional analysis of the structural variables of organizations"

(Pugh et al., 1963:298). Such analyses would be based upon "objective" rather than "subjective" data (Inkson et al., 1967).

The Aston researchers were also concerned with interrelating each of these conceptual levels. The examination of such a complex set of interrelationships necessitated that the study proceed in stages. Hitherto, they have developed most fully the first of these levels (organizational structure and functioning) and its associated contextual variables (Pugh et al., 1968b, 1969a). The second stage, the examination of group composition and interaction, has been initiated by comparing the climate, performance and structure of groups in two organizations, and relating the group dimensions to the structural characteristics of these organizations (Pheysey and Payne, 1970; Pheysey et al., 1971). The third stage has been initiated in part, by the development of models to identify power and decision making dimensions in organizational sub-units (Hinings et al., 1974).

The present research was based on the concepts and methodology developed through the first and second stages of the Aston studies. The structural variables were restricted to those defined by Pugh et al. (1968b), selected by Inkson et al. (1970a) and modified by Holdaway et al. (1975) and Kelsey (1973). Other variables, as explained later, were modified for this study to accommodate the type of organization under investigation.

Structural Variables and Dimensions

Using Weber as a starting point, the Aston researchers (Pugh et al., 1963:293-299) first isolated the conceptually-distinct elements in his formulation of bureaucracy. Following Heady's (1959)

suggestion, they distinguished between structural and behavioral elements and conceptualized six dimensions of organizational structure.

Pugh and his colleagues (1963:300) pointed out that an organization's structure cannot be defined "except in relation to its functioning." As a basis of conceptualization they drew upon Bakke's (1959) analysis of the processes of work organizations (identification, perpetuation, workflow, control and homeostatic processes). They measured each structural variable in terms of the processes with which it is associated.

The five variables (the sixth, flexibility, was dropped because its measurement required diachronic data which were not available) were paraphrased from Pugh et al. (1968b:73-79) as follows:

1. Specialization. Specialization was concerned with the division of labor within the organization, and the distribution of official duties among a number of positions. These activities excluded the workflow activities of the organization.
2. Standardization. Standardization was concerned with legitimized procedures to cover all circumstances.
3. Formalization. Formalization denoted the extent to which rules, procedures, instructions and communications were written down.
4. Centralization. Centralization was concerned with the locus of authority to make decisions affecting the organization.
5. Configuration. Configuration denoted the shape of the role structure in terms of counts of positions and ratio of various classes of employees.

To measure the various dimensions of structure, Pugh and his colleagues developed an interview schedule comprising sixty-four scales and subscales. The data were collected through interviews with the chief executive officers in fifty-two Birmingham area work

organizations. The organizations were diverse in purpose (from a large manufacturing firm to a school system) and size (from 250 employees to 25,000 employees).

The structural variables used in the Aston studies are somewhat similar to those of Hall (1963). Both have variables concerned with decision making, specialization and standardization of procedures. They differed in that the Aston studies included a variable concerned with documents (Formalization), whereas Hall included variables concerned with bases for promotion and prescription of interpersonal relationships.

The Aston and Hall studies differ in that the former utilized the interview technique, whereas the latter used the questionnaire approach. Furthermore, Newberry (1971:18-19) contends that some of Hall's items attempt to measure attitudes in addition to perception, whereas the Aston items seek objective facts.

The Aston scales were subjected to item analysis using the Brogden coefficient (Levy and Pugh, 1969). Standard scores were calculated and structural profiles constructed to represent the structural characteristics of each of the organizations. Variable comparisons were obtained by using product-moment coefficients (Pugh et al., 1968b:80-84). The correlation matrix was then subjected to a principal-components analysis resulting in four independent orthogonal factors. These were named and defined as follows (Pugh et al., 1969a:92):

1. Structuring of Activities: . . . the degree to which the intended behaviour of employees was overtly defined by the task specialization, standard routine and formal paper work.

2. Concentration of Authority: . . . the degree to which authority for decisions rests in the controlling units outside the organization and is centralized at the higher levels within it.
3. Line Control of Workflow: . . . the degree to which control was exercised by line personnel instead of through impersonal procedures.
4. Supportive Component: . . . the amount of activity auxiliary to the main workflow of the organization (Pugh et al., 1968b: 87).

Due to the weak loadings of the variables on Factor IV, Supportive Component, the decision was made to drop this factor from further analysis.

When the structural variables were analyzed, Pugh et al. (1968b:82) found that an organization with many specialists tended to also have a larger supportive hierarchy, more documentation and more standard routines. This finding suggested that as specialists increased in number, procedures are introduced to regulate their activities. Centralization on the other hand, correlated negatively with specialization and formalization, a finding which supported some propositions but contradicted others. Pugh et al. (1968b:84) concluded that organizations scoring high on specialization, standardization and formalization, would have gone a long way towards structuring their activities. The centralization scales, however, could not be regarded as measures of structuring in the same way. To assess structuring in terms of centralization would require measurement of how specific the loci of authority are.

The Aston Contextual Variables

The Aston researchers identified those aspects of context

of an organization's structure which had been found as being important by other researchers. For example, Etzioni (1964) emphasized the importance of goals (Charter), Woodward (1958) that of technology, Presthus (1958) that of size, and Eisenstadt (1959) that of dependence.

The importance of context was noted by Pugh et al. (1969a: 91) as follows:

The structure of an organization is closely related to the context within which it functions, and much of the variation in organizational structure might be explained by contextual factors. Many such factors, including size, technology, organization charter or social function and interdependence with other organizations, have been suggested as being of primary importance in influencing the structure and function of an organization.

Accordingly, the Aston approach (1969a:91) was to ". . . relate these [contextual] factors in a comparative systematic way to the characteristic aspects of structure . . . employing a multivariate factorial approach in both context and structure."

The Pugh et al. (1969a:94-107) contextual variables were paraphrased as follows:

1. Origins and History. This variable considered the age of the organization and whether the organization was entrepreneurial or government owned.
2. Ownership and Control. This variable included the degree of public accountability and the relationship of ownership and management.
3. Size. This variable was measured in terms of the number of employees, net assets utilized, and the number of employees in the parent organization.
4. Charter. This variable was concerned with the goals and self image of the organization.
5. Technology. Technology was defined as the sequence of physical techniques used on the workflow of the organization. Woodward's 'operational technology' formed the basic scales.

6. Location. Location was concerned with the number of operating sites of the organization.
7. Dependence. This variable measured the interdependence of the organization with other organizations. Included were such concepts as the number of specialisms contracted out and integration with suppliers.

The study (Pugh et al., 1969:109) found that no relationship existed between age and Structuring of Activities and Line Control of Workflow. However, age was negatively related to Concentration of Authority ($r = -0.38$). Size showed a strong positive relationship with Structuring of Activities ($r = 0.69$). Dependence had the highest correlation with Concentration of Authority ($r = 0.66$). Technology did not show the strong relationship with Structuring of Activities that had been expected.

Pugh et al. (1969a:111) concluded that:

The predictability of the structural dimension from contextual elements serves as external validating evidence for the structural concepts themselves. It has been shown that besides being internally consistent and scaleable, as previously demonstrated, they can also be related in a meaningful way to external referents.

Replication of the Aston Studies Using the Abbreviated Form

As Newberry (1971:23-24) and Heron (1972:46) stated, if the Aston methodology was to be more widely used, a more manageable method of data collection and processing was necessary. Inkson et al. (1970a) reported the successful development of a shorter form of the schedule to examine the major dimensions of structure and context. The abbreviated form uses the two strongest structural dimensions—Structuring of Activities and Concentration of Authority—and the contextual scales having the greatest predictive capabilities—

dependence and technology.

The results derived through data collection with the short form were compared with the original findings and the following correlations were obtained (Inkson et al., 1970a:320).

<u>Context</u>	
Workflow integration	0.96
Dependence	0.91
<u>Structure</u>	
Structuring of Activities	0.97
Concentration of Authority	0.93

Subsequent studies using the short form have been reported by McMillan et al. (1970), and Hinings and Lee (1971). The same two structural and two contextual factors that emerged in the original abbreviated replication were found in the applications of the short-form instrument in both Ohio and Toronto.

Child (1972), using the Inkson et al. (1970a) abbreviated form, analyzed the structures of eighty-two British work organizations. His replication of the Aston studies confirmed the tight nexus between specialization, standardization of procedures, paperwork, and vertical span expressed by the concept "Structuring of Activities." However, in contrast to the Aston study, centralization of decision making was found to be related negatively to structuring in a way that conforms closely to Weber's description of the bureaucratic mode of administrative control. Mansfield (1973) in a reanalysis of the Aston data drew a similar conclusion. He found (1973:487) that the direct

relationship between bureaucratization and centralization of decision making was weak, but tended to be negative, and that organizational size affected both these variables ". . . so that large bureaucratic organizations are much more likely to have decentralized the loci of decision making than small nonbureaucratic organizations." Speculating on the basis of these results, Mansfield (1973:488) stated:

It would seem that increasing size forces organizational managers to create rules to govern behavior and hence reduce the range of possible day-to-day problems which confront them. This increase in rules and paperwork allows them to delegate the right to make decisions without losing their overall control, as these delegated decisions are made within guidelines designated by the rules. If this is the case, the decentralization of decision making does not necessarily carry with it any delegation of discretion or weakening of the power of the highest ranks in the organizational hierarchy.

Riemann (1973) also used the Inkson et al. (1970a) abbreviated schedule in a study of nineteen manufacturing firms in Northeast Ohio. His study (1973:469) confirmed the Aston (Pugh et al., 1968b:88) conclusion that bureaucracy was not unidimensional but rather that a variety of structural arrangements appeared to be equally viable strategies for various organizations.

However, in comparing the factorial loadings for the Aston and Riemann study, considerable differences appeared. Where the Aston group isolated two dimensions of Concentration of Authority and Structuring of Activities, Riemann (1973:466) found three independent dimensions to describe the same aspects of bureaucratic structure. The Aston Structuring of Activities factor included both functional specialization and formalization. Two separate, independent factors of Specialization and Formalization, however, were isolated by Riemann.

Aston Studies on Similar Organizations

Most studies using the Aston methodology were conducted in diverse work organizations. Exceptions are studies by Tauber (1968), Tyler (1970), Heron (1972), Kelsey (1973), and Holdaway et al. (1975). Tauber examined six Birmingham hospitals and found that all had similar structures. Tyler examined only the specialization variable in Alberta schools. He reported that teacher specialization was a "strong and reliable" dimension of organizational structure.

Holdaway et al. (1975) examined the structures of twenty-three post-secondary colleges and technical institutes in Alberta and British Columbia. These institutions ranged in size from 38 to 639 employees with a median of 77. They used the methodology of the original Aston studies and the modified form described by Inkson et al. (1970a). Holdaway et al. (1975) found:

1. considerable variation among the institutions on the structural and contextual variables;
2. three factors emerged from a principal-components analysis, namely, Bureaucratic Control, Administrative Configuration, and Nonworkflow Proportion; and
3. some differences in the factor loadings (e.g., specialization did not load with formalization).

Holdaway et al. (1975:51-53) concluded that the Aston multidimensional approach was applicable to the study of organizational structures of small institutions which serve similar purposes, that different types of organizations will show different clustering of the selected variables upon different factors, and that educational units

may either make control more bureaucratic or increase the administrative hierarchy or both or neither.

Heron (1972) using a sample of five Alberta colleges attempted to determine to what extent longitudinally derived structural factors were similar to the Aston cross-sectionally derived factors and whether there were discernable patterns in the development of administrative structures in one type of formal organization. Heron concluded that:

1. the modified Aston instrumentation appeared to be both a sensitive and parsimonious method of examining structural variables and of making inter- and intra-organizational comparisons;
2. there was a high factor match between the Aston and the college factors;
3. colleges in their later years were highly specialized and structured, were highly decentralized and had considerable autonomy; and
4. colleges approximated five major "growth" stages in their evolution.

Kelsey (1973) adapted the three measures (functional specialization, documents, and centralization) of the Inkson et al. (1970a) short form and constructed a new instrument to measure a school's workflow. His sample consisted of twenty-two secondary schools in two different countries (West Riding of Yorkshire, England, and Edmonton, Alberta). He found that his instrument did not discriminate structural dimensions as robustly as had that of the original Aston studies, and that specialization appeared to be

of less importance in school organizations than in other types of organizations.

The three studies cited were important to this study in that they served to identify and conceptualize significant variables as will become evident in the next chapter.

STRUCTURE AND ORGANIZATIONAL BEHAVIOR

The conceptual nexus between structure and organizational behavior has been previously established (p. 7). Numerous organizational climate measures (Hellriegel and Slocum, 1974), including the OCDQ, have been used to examine this relationship.

Empirical Studies

A number of studies that have examined the relationships among the contextual, structural and climate variables are summarized.

Pheysey, Payne and Pugh (1971), in an attempt to move to the second level of analysis suggested in the original Aston work (Pugh et al., 1963), explored the relationships between organizational structure and climate. Using Hemphill's (1956) Group Dimensions scale, G. C. Stern's (1968) Organizational Climate Index, and the Inkson et al. (1970a) form, they compared groups of line managers and supervisors in two organizations having different organizational structures. As was hypothesized, relationships among members of the groups in the more mechanistic organization were seen as more formal at all levels of the hierarchy, all groups saw themselves as having less autonomy, and the organizational climate was seen as being oriented towards rules and conventionality.

In a later study, Payne and Mansfield (1973) examined the relationships among contextual, structural and climate variables at the organizational level of analysis. Using the Business Organization Climate Index (BOCI) developed by Payne and Pheysey (1971) and the Inkson et al. (1970a) short form, their most significant finding was that dependence and size correlated highly with climate scores.

A few educational studies have been conducted using either the School Bureaucratic Index (Hartley, 1965) or Hage and Aiken's (1967) measure of structure and the OCDQ. Smith (1968) investigated the relationship between structure and climate in Texas Junior College organizations. Using Hage and Aiken's (1967) measure of structure and Halpin and Croft's (1963) measure of climate, he found (1968:104) that colleges in his sample constituted two groups according to their structural configuration and that there were differences in the climates between groups. There was a tendency for a climate of high esprit, disengagement, aloofness and consideration to be associated with high complexity, low centralization, low formalization, and low stratification.

McKague (1968) using a sample of thirty-nine Saskatchewan high schools investigated the relationships among bureaucracy, leadership style and school organizational behavior. He used Hartley's (1965) School Bureaucratic Index, Fiedler's (1957) Least Preferred Co-worker (LPC) scale and the eight subtests of the OCDQ. His major hypotheses that the total degree of bureaucratization would be associated with differences in teacher behavior were not supported. McKague (1968:137) did however conclude that principals

who were accepted by their staff (high GA) and whose behavior tended to be directive and managing (low LPC) were found in schools where teachers experienced a high degree of morale (high esprit), enjoyed friendly social relations with one another (high intimacy), did not feel burdened by administrative responsibilities (low hindrance), and were not out of touch with the functions they were expected to perform (low disengagement).

George and Bishop (1971) investigated the relationships among organizational structure, teacher personality and organizational climate in two small American school districts. Using the Structural Properties Questionnaire (adapted from Hage and Aiken, 1967), Cattell's Personality scale and the OCDQ, they concluded (1971:474) that in the smaller, less bureaucratic innovative district, a preponderance of the teachers exhibited low anxiety and perceived low organizational structure. In the larger, traditional, and more bureaucratic district, the teachers perceived high organizational structures and a greater degree of organizational anxiety.

Grassie and Carss (1973) using a sample of 574 teachers from fourteen metropolitan high schools in Brisbane, Queensland, examined the relationship among the teachers' perceptions of the structural characteristics of their schools, the leadership quality of their principals, and the extent of satisfaction they expressed with their work and their colleagues. They concluded that it is the structure and leadership quality perceived which is the cause of satisfaction.

The above studies, while not based on the Aston methodology,

nevertheless have demonstrated the utility of examining the relationship between structure and behavior. The next section provides a summary of the OCDQ as used in this study.

Organizational Climate Description Questionnaire

In the early 1960's Halpin and Croft investigated factors which might contribute to the organizational climate of schools. They limited their research to the "social component" of the school, conceptualizing climate in terms of the behavior of teachers and principals.

In developing their instrument, one thousand items were administered to 1151 staff members in 71 elementary schools from six different regions of the United States. The items were subjected to different kinds of analysis, particularly factor analysis, to determine which items clustered together and which differentiated among schools.

The OCDQ uses a Likert-type scale consisting of sixty-four items, with each item contributing to one of the eight subtests which describe teacher and principal behavior. Staff complete the questionnaire. The items are scored by subtests and averaged, the subtest scores for each school averaged, and the resulting school means are standardized using a mean of fifty and a standard deviation of ten. This produces a "normative standardization" of scores. In order to compare subtest scores within a school as well as between schools, the subtests are standardized for each school. This yields the "ipsative standardization," giving an eight-point profile for each school which is used to determine the organizational climate (Halpin, 1966:167-168).

The four teacher behaviors measured by the OCDQ are disengagement, hindrance, esprit and intimacy. The four principal behaviors measured are aloofness, production emphasis, thrust and consideration.

The behavioral variables and their definitions were listed as below (Halpin, 1966:150-151):

1. Disengagement refers to the teachers' tendency to be 'not with it.' This dimension describes a group which is 'going through the motions,' a group that is 'not in gear' with respect to the task at hand. . . .
2. Hindrance refers to the teachers' feeling that the principal burdens them with routine duties, committee demands, and other requirements which the teacher construes as unnecessary 'busywork.' The teachers perceive that the principal is hindering rather than facilitating their work.
3. Esprit refers to morale. The teachers feel that their social needs are being satisfied, and that they are at the same time, enjoying a sense of accomplishment in their job.
4. Intimacy refers to the teachers' enjoyment of friendly social relations with each other. . . .
5. Aloofness refers to behavior by the principal which is characterized as formal and impersonal. He 'goes by the book' and prefers to be guided by rules and policies rather than to deal with the teachers in an informal face-to-face situation. . . .
6. Production Emphasis refers to behavior by the principal which is characterized by close supervision of the staff. He is highly directive and plays the role of a 'straw' boss. His communication tends to go in only one direction, and he is not sensitive to feedback from staff.
7. Thrust refers to behavior by the principal which is characterized by his evident effort in trying to 'move the organization.' Thrust behavior is marked not by close supervision, but by the principal's attempt to motivate the teachers through the example which he personally sets. Apparently, because he does not ask the teachers to give of themselves any more than he willingly gives of himself, his behavior, though starkly task-oriented, is nonetheless viewed favorably by the teachers.

8. Consideration refers to behavior by the principal which is characterized by an inclination to treat the teachers humanly, to try to do a little something extra for them in human terms.

The reasons for choosing the eight subtests of the OCDQ will become apparent in the subsequent chapter.

CONCEPTUAL FRAMEWORK

The research design of this study was based on the conceptual ideas of Pugh et al. (1963, 1968b, 1969a) because of the nature of the problems addressed. This chapter has indicated that the Weberian emphasis on rationality and dimensions of stability led to concepts and studies of organizations which emphasized the informal, interpersonal and personal dimensions. For some researchers these dimensions were considered as dysfunctional aspects of the Weberian description. Hickson (1966:227) has summarized these polar positions as mechanistic vs organistic, programmed vs nonprogrammed, formal vs informal and so on. However, Hickson contends that the reaction against the Weberian imperatives has resulted in an appreciation of the "dynamic nature of structure."

This dynamic nature of structure was demonstrated by Bakke (1959:16-75) whose work formed the conceptual basis for the Aston studies. Bakke considered that an organization is composed of a Charter, Resources and Essential Activity Processes. These are operationalized by the organizational elements of individual and group behavior, prescribed functions, instruments, support personnel, and stabilizing elements. The resulting activities produce a series of bonds which are justifiable on the basis of

organizational needs. Thus, (a) the Identification Bond is formed by the legitimizing of the organizational charter, (b) the Perceptual Bond through acquiring, maintaining, and developing the basic resources, (c) the Workflow Bond as a result of producing and distributing the output, (d) the Control Bond is formed through directing, coordinating, stimulating, regulating, and appraising, and (e) the Homeostatic Bond from preserving the organizational integrity.

This recognition of the dynamics of structure as patterned activities, also served to emphasize its complexity. The complexity of organizational structure has been noted by Hage and Aiken (1967) and Heydebrand (1967). Heydebrand (1967:70), for example, in an analysis of the Anderson and Warkov study of hospitals stated that:

Perhaps the most important single conclusion from this study is that an understanding of organizational structure cannot be obtained from the correlation of any two characteristics alone. . . . it is the complex pattern of their interrelations which constitute the new reality of organizational studies.

The discussion in this chapter on organizational structure suggests that the Weberian imperatives are basic to the consideration of structure, and that the reaction to the bureaucratic imperatives have emphasized the "dynamic complexity" of structure. Pugh et al. (1968b) have also observed that the use of structural variables to study organizations is a direct and parsimonious approach since these variables have a quantitative characteristic which can be assessed. They therefore proposed (1963:298) that it may be "more useful to regard bureaucracy as being characteristic of the structure of an organization and relate given organizational forms to group and individual behavior."

The theoretical position of this study was therefore that secondary schools have identifiable structural characteristics, and that structure both reflects and accounts for much of the behavior of school personnel. How organizational members behave is explained by the organizational control patterns and the expectations of the people with whom they work.

Table 1 outlines for operational purposes the three sets of variables used to address the problem regarding the extent of relationships among structural and behavioral variables in secondary schools. The conceptualization of the variables draws heavily on the work of the Aston researchers and has been elaborated in an earlier section of this chapter.

Structure was a multidimensional concept described as "organized complexity." It consisted of the variables specialization, formalization, centralization, standardization and configuration. A factorial analysis was undertaken to establish the underlying dimensions of organizational structure.

Furthermore the study of structure and activities of an organization must be conducted in relation to its other characteristics and to the social and economic context in which it is found. In this study, the list of contextual variables was related to the variables and factors of organizational structure. These contextual variables included size, age, manpower turnover, administrative experience, location and charter. These were used in a multivariate analysis to explain structural forms.

The group and leader behavior variables were then examined

Table 1

SCHEME FOR EMPIRICAL STUDY OF SECONDARY SCHOOLS

<u>Contextual Variables</u> ³	<u>Structural Variables</u> ¹
Size (students)	Functional Specialization
Size (professional staff)	Formalization
Size (total employees)	Centralization
% Manpower Turnover	Standardization
Principal (total experience)	Configuration
Principal (experience in present school)	% Superordinates
	% Clerks
	% Nonworkflow
Age	
Charter	
Location	<u>Behavioral Variables</u> ²
	Disengagement
	Hindrance
	Esprit
	Intimacy
	Aloofness
	Production Emphasis
	Thrust
	Consideration

¹Pugh et al., 1968b²Halpin and Croft, 1963³Newberry, 1971

in relation to the variables of context and structure. The quality of interaction among group members and between leader and group was measured by Halpin and Croft's (1963) OCDQ. The OCDQ is defined by eight dimensions or subtests as previously described (pp. 30-31). Four of these subtests pertain to characteristics of the work group and four to the behavior of the formally designated leader.

Each of these levels was then interrelated using a multivariate analysis to determine the extent of relationships. This framework was seen as a means of controlling for organizational factors and allowing for more rigorous comparative studies in the future.

SUMMARY

The formulations of Weber underlie much of the work on organizational structure. He enumerated a list of imperatives, which if achieved by an organization, would result in maximum technical efficiency and rationality. Early research tended to accept the set of characteristics as an ideal-type and organizations were compared to the ideal. These early endeavors in bureaucracy implied that bureaucracy was present or absent in an organization (or a modified form existed) and that bureaucracy was a unitary concept (in that its characteristics vary together).

Hall recognized the weaknesses of studying bureaucracy in terms of comparisons to Weber's ideal type. He conceptualized organizations as possessing characteristics of the bureaucratic model in varying degrees along the several dimensions of bureaucracy.

Through empirical research Hall found that organizations could be placed on the various dimensions and then described in terms of a profile. Subsequent research using Hall's instrument observed that the various dimensions were somewhat independent and cast doubt upon the unity of Weber's ideal type.

Heady, recognizing the confusion in research, suggested that bureaucracy be defined in terms of structural characteristics that were already generally accepted, and that research on behavior be carried out with a view towards developing a classification of organizations based on variations in organizational behavior. The Aston researchers followed Heady's suggestions.

From an examination of the literature on organizations, they conceptualized six primary dimensions of organizational structure: (1) specialization, (2) standardization, (3) formalization, (4) centralization, (5) configuration and (6) flexibility (later dropped). These constitutive definitions, were then translated into operational definitions and scales constructed. Scales were also constructed for aspects of organizational context. These were then used in a multivariate analysis to predict structural forms. By means of principal-components analysis four factors were obtained, which were then used to explain organizational structure. These factors were: (1) Structuring of Activities, (2) Concentration of Authority, (3) Line Control of Workflow, and (4) Supportive Component.

From a review of the theoretical literature and empirical studies, structure was considered as a dynamic, multidimensional and complex phenomena that both reflects and accounts for much of the

behavior of organizational members. Consequently a multivariate analysis was required to determine the dimensions of school organizational structure and the extent of its relationships with selected behavioral variables.

Chapter 3

ELABORATION OF THE PROBLEM AND DEFINITION OF TERMS

This chapter provides a discussion of the problems and the definition of terms to be used in the study.

THE PROBLEM

The central problems in this study were stated in the form of two questions.

1. To what extent is the Aston methodology appropriate for the study of organizational structures in secondary schools?
2. To what extent do relationships exist between organizational structure and certain behavioral variables?

Sub-problems

The following sub-problems were formulated from the general problem.

1.0 Structure

- 1.1 To what extent were mean item analysis values in secondary schools comparable with those obtained by the Aston and college studies?
- 1.2 What were the means, ranges and standard deviations for the structural variables in secondary schools?
- 1.3 What were the relationships between each of the ten structural variables in secondary schools?
- 1.4 Were there identifiable structural factors in secondary

schools?

- 1.5 To what extent were structural factors in secondary schools comparable to structural factors identified by the Aston and college studies?

2.0 Context and Behavior

- 2.1 What were the relationships between each of the seven contextual variables in secondary schools?
- 2.2 What were the relationships between each of the eight teacher-principal behavior variables in secondary schools?
- 2.3 What were the relationships between contextual and behavioral variables in secondary schools?

3.0 Structure and Context

- 3.1 What were the relationships between the structural variables and contextual variables in secondary schools?
- 3.2 What were the relationships between structural factors and contextual variables in secondary schools?

4.0 Structure and Behavior

- 4.1 What were the relationships between structural variables and behavioral variables in secondary schools?
- 4.2 What were the relationships between structural factors and behavioral variables in secondary schools?

DEFINITION OF TERMS

The definitions as contained in Pugh et al. (1968b:72-79) and Holdaway et al. (1975:40-42) have been paraphrased to a large extent.

Organizational Structure

Structure was defined as the patterns of differentiated activities which are internal, occur regularly, change slowly, and arise from functions and roles.

Structural Variables

The set of variables which operationally defined organizational structure were described by Pugh et al. (1968b:72-79) in the following manner.

Specialization—the division of labor within the organization and the distribution of official duties among a number of positions. Specifically, in the Aston study and this study specialization referred only to specialization in non-line functions.

Formalization—the degree to which procedures, rules, communications and instructions were written and filed. Two scales, additively, composed the degree of formalization.

1. Documents—the degree to which documents existed to prescribe roles.
2. Recording of Role Performance—the degree to which performance is recorded.

Centralization—the degree to which decision making power in both policy and operational fields was concentrated at or near the top of the role structure of the institution.

Autonomy—the degree to which decisions were made inside the organization.

Configuration. Configuration was concerned with the shape in a topological sense of the role structure of the organization. It was described by the following three measures.

1. Percentage of Clerks—the percentage of total employees engaged in clerical duties.
2. Percentage of Non-workflow Personnel—the percentage of employees not involved in instructional or educational administration as opposed to business administration.
3. Percentage of Superordinates—the percentage of employees involved in educational administration in full-time equivalents. Department Chairmen's administrative time was included.

Standardization—the degree to which legitimized procedures are used to cover all circumstances.

Contextual Variables

Context was described by the Aston studies (Pugh et al., 1969a:91) as the set of organizational dimensions which forms the setting in which structural dimensions can be identified and expressed. The contextual variables used in this study are defined as follows.

Age—the number of years that the secondary school had been in operation.

Size—was indicated by three measures.

1. Administrators and Instructors—the total number of professionally certified administrators and teachers.

2. Employees—the total number of non-student employees in the school.
3. Students—the total number of full-day time students enrolled at the end of September for the academic year, 1975-76.

Location—the province in which the school was situated.

Charter—whether the school was in an urban or rural setting.

Percentage Manpower Turnover—the annual percentage turnover in professional staff.

Principal Experience—measured by two variables, the total administrative experience and administrative experience within the present school.

Aston Structural Factors

The Aston structural factors were those found by Pugh et al. (1968b) in factor analysis of the structural data obtained in their study. The following description defines these factors and indicates the scales and subscales each loaded in the original study (1969a:92).

Structuring of Activities—the degree to which employee behavior was "overtly" defined by task specialization and standard routine. It was composed of the scales, Formalization, Specialization, Chief Executive Span, and Vertical Span.

Concentration on Authority—the degree to which authority to make decisions rested either at the top of the hierarchy or outside

of the organization. It was composed of the scales, Autonomy (negative), Centralization and Percentage Superordinates.

Line Control of Workflow—the degree to which control was exercised by line personnel instead of through impersonal procedures. It was composed of the scales, Subordinate Ratio (negative), Percentage of Superordinates, Percentage of Clerks, Recording of Role Performance (negative), and Standardization of Procedures for Recruitment and Advancement.

Organizational Behavior

This was a general term referring to the behavior of teachers and principals as it occurs within school organizations.

Behavior Variables

The set of variables which operationally defined teacher-principal behavior in school organizations as described by Halpin and Croft's Organizational Climate Description Questionnaire (1963).

Teacher Behavior—as measured by the four subtests of the OCDQ.

1. Disengagement—the behavior of teachers which could be considered detrimental to the achievement of the school goals; characterized by mannerisms such as seeking special favors or opposing majority opinions.
2. Hindrance—the feeling among teachers that they are burdened with administrative paper work and committee requirements, and the concomitant expression of these

feelings.

3. Esprit—the morale of teachers; a feeling expressed when both social and task accomplishment needs are being satisfied.
4. Intimacy—the teachers' enjoyment of friendly relations with one another, and the expression of this behavior.

Principal Behavior—as measured by the four subtests of the
OCDQ.

1. Aloofness—the behavior of a principal which is characterized as "formal and impersonal."
2. Production Emphasis—behavior characterized by close supervision of the staff in order to ensure a high level of performance.
3. Thrust—behavior which motivates teachers through the example of hard work which the principal sets.
4. Consideration—behavior by which the principal takes an interest in his staff as persons and not merely as employees and attempts to do something extra for them in "human terms."

Secondary School

A secondary school denotes a school in which students are enrolled for that phase of their education preceding employment, university or college entrance. It usually includes students who are enrolled in grades 9 to 12 or 10 to 12.

Chapter 4

INSTRUMENTATION AND METHODOLOGY

The methodology used in this study was essentially that of the Aston studies. This chapter includes a discussion of the two instruments used, the Interview Schedule and the OCDQ, as well as the data collection and analyses. All instruments described here are to be found in Appendix A.

THE INSTRUMENTS

Interview Schedule

The short form Interview Schedule reported by Inkson et al. (1970a) was adapted to gather data for this study. Chapter 2 indicated that the abbreviated form uses the two structural factors, Structuring of Activities and Concentration of Authority, and selected contextual variables.

For this study, the abbreviated form of the Aston Interview Schedule was modified in several ways to increase its applicability to the type of organization under investigation. These modifications included some changes in terms, some operational redefinitions, and some additional items were added.

Language adaptation. As Newberry (1971:51) and Kelsey (1973:94) point out, certain manufacturing organizational terminology is not always directly applicable to educational organizations. In an attempt to resolve the difficulty, a word or set of words (where

necessary), which as nearly as possible referred to the equivalent process, activity or document, were used. Both of the above studies provided valuable assistance in this regard.

Additions from the original Aston instrument. The centralization variable was reintroduced from the sixty-four scale instrument. The scales with the highest factor loadings on Factor III, line control of workflow, were reintroduced. These scales were: percent of clerks, standardization of procedures controlling selection and advancement, and recording of role performance. References were also made to the original long form in order to increase the number of items per scale and for the Factor III scales.

Additionally, a small number of selected items were included which appeared pertinent to educational organizations, but for which no parallel items were in the short form. These additions included measures for percentage manpower turnover, principal (total experience), and principal (experience in present school).

Redefinition of the criterion for specialization. Because the Aston measure of specialization excluded measures of workflow activities, and because the organizations in the present study were relatively small, the criterion by which an activity would be judged to be specialized was changed. Holdaway et al. (1975) counted an activity as specialized if it was performed by a staff member who spent at least half of his time on that activity. In schools, however, according to Kelsey (1973:95), many nonworkflow activities are performed as supernumerary duties by staff, with no particular

time allocation for them. Consequently, even using the half-time designation of specialization, few schools would have scored on many activities. The approach taken in this study was to focus on delegation as the key component to division of labor. Essentially delegation entails someone or a group taking the responsibility for the performance of a particular activity. Delegation may occur in a number of ways (Kelsey, 1973:96). Activities may be delegated on an ad hoc or permanent basis; and the delegation may be specific or non-specific. Furthermore, delegation may be extensive (many people involved) or intensive (few people involved).

Since the Aston conceptualization of specialization refers to regularly performed, specifically delimited responsibilities, the kinds of delegation examined in this study were those activities specifically and exclusively delegated to one or more staff members. In terms of extensive and intensive delegation, schools where the different nonworkflow activities were delegated to many different staff, were considered more functionally specialized than schools where the various activities were delegated to a few people.

Kelsey (1973:97-101) stated that three elements must be taken into account in computing a specialization score: (1) whether the activity was performed (i), (2) whether or not it was specifically delegated (a), and (3) the extent to which delegation in the school was intensive or extensive (b). By way of illustration consider the following example. School A performed 20 activities ($i = 20$), of which 15 activities were delegated ($a = 15$) to 10 different delegates ($b = 10$). Using Kelsey's (1973:99) formula $b^2/a_i \times 100$, School A's

specialization score would be 33.

Charter. In this study, Charter was redefined to differentiate between urban and rural schools.

Reliability. The internal consistency of the structural scales specialization, documents, recording of role performance, standardization of personnel procedures, autonomy and centralization was ascertained in the scaling and item analysis described later in this chapter.

Validity. Kerlinger (1964:445) stated that there are four types of validity: content, predictive, concurrent and construct. Content validity consists essentially in judgement—"alone or with others, one judges the representativeness of the items" (1964:446). Predictive or concurrent validity is characterized by "prediction to outside criterion" (1964:447). Factor analysis and correlating items with total scores are two methods of checking construct validity.

Content validity may be said to have been assessed by having others examine the instrument used. Additionally, accuracy of the data was checked by superiors where possible. To a large extent predictive and construct validity have been established by the Aston researchers. It was suggested that one method of assessing construct validity is to correlate items with total scores. In the present study, formalization and documents had a correlation of $r = 0.99$, indicating high construct validity.

Organizational Climate Description Questionnaire (OCDQ)

This section discusses the validity and reliability of the OCDQ.

Reliability. In order to test the reliability of their instrument, Halpin and Croft (1963:49) performed (1) the split-half coefficient corrected by the Spearman-Brown formula, (2) the correlation between odd- and even-numbered items, and (3) communality estimates of a three-factor solution. Acceptable subtest reliability was achieved by the tests of internal consistency and equivalence.

Validity. Halpin and Croft assumed no responsibility for the validity of the OCDQ. This aspect they left to other researchers.

In general, studies have replicated the factorial content of the OCDQ. Emma (1964), Gentry and Kenny (1965), Anderson (1964), Norman (1965), McFadden (1966), Novotney (1965), Carver and Sergiovanni (1965), Hoy (1972), Pritchard (1966), Roseveare (1965), Stanbury (1968), Stimson and Labelle (1971), and Andrews (1965) have reported that the assignment of sixty-four items to the eight subtests is supported by factor analysis. Similar patterns of subtest intercorrelations have been observed by Brown (1965), Smith (1966), Vanderlain (1968), and by Resurreccion (1967) in his study of 70 elementary schools in Manila.

Pritchard (1966) and McFadden (1966) employed the techniques of the non-participant observer in rating schools. McFadden found higher consistency between the observations and the subtest categories than between the observations and the climate categories. Pritchard

found significant agreement on five dimensions and concluded that all eight were viable concepts.

In related research, Anderson (1965), Feldvebel (1964), Emma (1964), Nicholas (1965), Andrews (1965), Hartley (1970), Smith (1966) and McWilliams (1967) found consistent findings relating subtest scales and a number of external variables. Stanbury (1968) reported a grouping of items similar to the original OCDQ findings, although it appeared that thrust and consideration measured the "same things." McKague (1968) factor-analyzed the sixty-four items with a sample of teachers in forty Saskatchewan high schools, and reached a similar conclusion.

The most extensive validity studies were those conducted by Andrews (1965). His research involved 165 Alberta schools, including both elementary and secondary schools. He concluded that "evidence provided strong indication that the OCDQ is as valid for other kinds of schools as it is for elementary schools" (1965:322). Additionally, Andrews (1965:326) claimed that the OCDQ in relation with other variables demonstrated a large number of relationships which were consistent with theory ". . . some were equivocal, and none which were inescapably inconsistent." However, Andrews (1965:333) argued that the six climate types detracted from the utility of the OCDQ and that the "climate categories" added nothing to the meaning that is already present in the subtest scores.

More recently, studies on the OCDQ have also directed attention to the fact that larger secondary schools appeared to have "closed climates" to a considerably greater extent than elementary

schools (Carver and Sergiovanni, 1969; Watkins, 1968; Hoy, 1972; and Grassie, 1973). In their study of thirty-six large Illinois high schools (mean teacher size 93), Carver and Sergiovanni (1969) found that 72 per cent of the schools were classified as having a closed climate, and that no school was classified as being open. This distribution differed considerably from the Halpin and Croft (1963) study, but was more in accord with the results of Watkins (1968) study of nine secondary schools (mean teacher size 52). Similarly, Hoy (1972) using a sample of forty-five large secondary schools in New Jersey (range 37-158, mean teacher size 80) claimed that all of the schools fell on the closed half of the six-climate continuum. He concluded (1972:47) that the OCDQ subtests provided a set of dimensions which identified important differences among the climates of secondary schools, but not the climate prototypes.

Appleberry and Hoy (1969:78) note that Croft has suggested an alternate method of ranking schools on the climate continuum:

This method involves ranking schools in terms of their openness scores. An openness score for each school is found by summing the school's scores on the Esprit and Thrust subtests, then subtracting the school's score on the Disengagement subtest. While not identifying discrete climates, this method does allow a ranking of the schools along a continuum from open to closed.

Both Hughes (1968) and Hoy (1972) have reported using this method.

Hoy (1972:50) in his article summarized the status of the OCDQ. He concluded: (1) the prototypic profile method of designating discrete climates among secondary schools is not useful; (2) until norms for secondary schools are established, the "openness" index provides a relative measure of the openness of the climate; (3) the

subtests of the OCDQ measure important aspects of the organizational behavior of secondary schools; and (4) that at the present time the overall climate does not predict anything that is not better predicted by the subtests.

Summary. According to McKague (1968:47), "it is in their classification of teacher and principal behaviors that Halpin and Croft have made the most significant contribution to the study of educational organizations." The subtests, as had been demonstrated, have proven to be reliable in describing the "social component" of schools.

By limiting this study to the subtests of the OCDQ rather than to climate scores, the strengths of the instrument could be utilized and most of its weaknesses avoided. McKague (1968) has made prior usage of the instrument in this manner.

THE SAMPLE

The study utilized secondary schools offering education for grades 9 to 12 level and having a minimum number of twenty-five teachers. Of the potential population of eighty-one schools, forty granted permission to conduct the study. These secondary schools were located in cities and towns, and placed varying emphasis on vocational and academic programs.

Table 2 provides a summary of the sizes, ranges and means for the sample and population. Twenty-two of the secondary schools were located in Manitoba and eighteen in Saskatchewan. The schools ranged in size from 380 to 1700 full-time day students with a mean

Table 2

COMPARISON OF SAMPLE AND POPULATION ON A NUMBER OF MEASURES

	Number of Schools			Teachers		Students		
	Manitoba	Saskatchewan	Totals	Mean	Standard Deviation	Range	Mean	Standard Deviation
Sample	22	18	40	43	15.5	380-1700	831	344
Population	42	39	81	41.5	15.1	374-1700	796	336

size of 831 students and a standard deviation of 344. The mean number of teachers was 43 and the standard deviation was 15.5. These figures suggested a high degree of variability in terms of size. The sample represents fairly accurately the population of secondary schools in the two provinces. Table 27 in Appendix B provides the data for each secondary school.

THE DATA

Prior to contacting the schools to be studied, permission was obtained from the superintendents who had jurisdiction over the secondary school concerned. Some superintendents obtained board approval, others met with the principals of the schools involved, and still others left the decision in the hands of the school principal. In every case, an outline of the study and a permission letter were forwarded to both the superintendent and principal.

For the Manitoba sample, the OCDQ was mailed in advance of the researcher's visit to the school to collect the data on its structural components. In the Saskatchewan sample, the OCDQ was left upon completion of the interview. This was necessitated by the national postal strike in October and November of 1975. The Saskatchewan questionnaires were returned upon completion.

Data pertaining to the structural dimensions of schools were collected in an interview with the principal of each school except two. In these two schools the principal was not available and the data were gathered in an interview with the vice-principal of the school. Interviews ranged in length from one hour to three and a

half hours. Data were recorded on the interview schedule and over half were taped.

Principals were asked to supply copies of all current school handbooks, written policy statements, standing instructions, school calendars, job descriptions and similar materials. Specimen copies of weekly bulletins, administrative memoranda, departmental regulations were also obtained, as were copies of such items as school newspapers and any information bulletins sent to the parents.

In many cases principals provided extensive tours of the school facilities and arranged meetings with other staff specialists such as guidance counselors, librarians, department heads and business administrators. Opportunities were also afforded to meet staff members during lunch, coffee breaks, and staff meetings. Where possible, meetings with central office administrators were used as a final form of validation of data collection.

The distribution of the OCDQ was handled in a number of ways at the school level. In situations where the staff had given prior approval to the study, questionnaires were placed in the teacher's mailbox. These were to be returned upon completion in a sealed envelope to a designated receiver. A few schools distributed the questionnaires through their department heads, and a few schools handled their questionnaires as part of their staff meetings. Table 3 indicates the staff sizes and percentage of returns for the OCDQ.

When the questionnaires were received, they were removed from the envelopes and checked for completeness. All teacher

Table 3

SUMMARY OF STAFF SIZES AND PERCENTAGE RESPONSES TO OCDQ

School I.D.	Total Professional Staff	No. of Teachers	No. of Complete Responses	% Response
01	41	39	39	100.0
02	64	60	60	100.0
03	31	29	26	89.6
04	26	24	25	100.0
05	75	72	61	84.7
06	43	41	40	97.6
07	49	47	44	93.6
08	54	52	43	82.3
09	46.5	44	40	90.0
10	39	35	33	94.3
11	29	27	24	88.9
12	34.5	32	26	81.3
13	36.5	35	34	97.1
14	42	40	39	97.5
15	28	26	28	100.0
16	24	22	20	90.0
17	55	53	36	67.9
18	54.5	52	46	88.5
19	27	25	14	56.0
20	27.5	26	26	100.0
21	26	24	22	91.7
22	40	38	32	84.2
23	46	43	35	81.4
24	53	50	33	66.0
25	83	80	77	96.7
26	35	33	25	75.8
27	65.5	63	47	74.6
28	75	72	51	70.8
29	52.5	51	35	68.6
30	26	24	19	79.2
31	29	27	21	77.8
32	30	28	23	72.2
33	72.5	70	42	60.0
34	35	33	28	84.8
35	28	26	25	96.2
36	45.5	44	39	88.6
37	30.5	28	16	57.1
38	33	31	22	71.0
39	47	45	31	68.9
40	40	37	33	89.2
Total	1,709	1,618	1,350	83.9

questionnaires used in the analysis were given school and teacher code numbers. The responses were then punched on to IBM cards, and appropriate computer programs used in the analysis of data.

DATA ANALYSES

The method of data analysis of the Aston-type data has been discussed by Levy and Pugh (1970), Newberry (1971) and Kelsey (1973), whereas Halpin and Croft (1963) outline that of the OCDQ.

Item Analysis

In order to ensure that the measures of organizational structure approximated a Guttman scale, each set of items was subjected to item analysis. This analysis was carried out for two reasons: first, the items had been altered to make them applicable to educational organizations, and second, the organizations in this study, unlike those of the Aston studies, had similar functions. The method of item analysis has been discussed in considerable detail by Newberry (1971:58-65) and Kelsey (1973:74-79), and therefore, will not be elaborated any further.

The Brogden coefficient (Brogden, 1949) was used to determine the goodness of fit, and any item having a GBR less than $|0.40|$ was rejected. Table 4 provides a summary of results of item analysis. Mean item analysis values for the scales ranged from 0.65 to 0.75. Four of the six scales exceeded the means achieved by the Aston studies, and the other two were of similar size. These results were also comparable to that obtained by Holdaway et al. (1975:43) for colleges.

Table 4

SUMMARY OF ITEM ANALYSIS RESULTS

	No. of Items at Start	No. of Items Deleted $r \leq 0.40$	No. of Items Not Used for r	No. of Items Used for r	Mean r Aston ¹	Mean r Colleges ²	Mean r Kelsey ³
Specialization	117	33	0	84	0.69	0.72	0.74
Documents	28	3	0	25	0.65	0.65	0.65
Recording of Role Performance	11	3	0	8	0.67	0.77	N/A ⁴
Standardization	37	11	0	26	0.67	0.85	N/A
Centralization	110	20	15	75	0.74	0.78	0.64
Autonomy	22	4	3	15	0.75	0.78	N/A

¹Pugh et al., 1968b.
²Holdaway et al., 1975.
³Kelsey, 1973.
⁴N/A means not applicable.

The weakest scale in the Aston study was centralization with a coefficient of only 0.40 (Pugh et al., 1968b:104). The coefficient of 0.74 achieved here is therefore a notable improvement in the measurement of this variable. Holdaway et al. (1975:43) in their college study, obtained a coefficient of 0.76 and reasoned that in similar organizations such as educational institutions, there may be particular, "though very similar, forms of decision making...."

The scale values obtained here reaffirm that the concepts of structure which the scales operationalize are as appropriate to secondary schools as they are to colleges and industrial plants. They emerge empirically as substantially unidimensional variables with coefficients as high or higher than those obtained in the Aston (Pugh et al., 1968b, 1969a) and college (Holdaway et al., 1975) studies.

Further Analyses

The remaining analyses were performed once the structural scales had been established.

Structure. Pugh et al. (1968b) and Newberry (1971:65-66) describe the method of scoring. Responses for each school were scored to obtain scale scores for each of the structural variables. The formalization score was formed by adding the documents and recording of role performance scores. The specialization scale was scored as described by Kelsey (1973:97-101) and as previously discussed (pp. 46-47). Scores on the configuration items were also entered. Ranges, means and standard deviations were calculated. Normalized standard scores were calculated using a means of fifty and

a standard deviation of ten. The structural scales were intercorrelated to determine the relationship between structural variables. The structural scores were then subjected to factor analysis to determine the underlying structural dimensions for school organizations. Structural factor scores for each school were derived, normalized and standardized. Raw scores for each school are found in Table 26 of Appendix B.

Context. Intercorrelation coefficients were calculated for the contextual variables to determine what relationships existed among them.

Behavior. The OCDQ was scored as previously described (p. 29). Item scores were combined by subtest and averaged, the subtest scores averaged for each school and the total population. The scores were standardized using a mean of fifty and a standard deviation of ten. Intercorrelation coefficients were calculated for the behavioral variables to determine what relationships existed among them.

Relationships among structure, context and behavior. Scores on the structural, contextual and behavioral variables were intercorrelated to determine what relationships existed among the variables. Scores on the contextual and behavioral variables were also correlated with the structural factors to determine the relationships that existed among these variables and factors.

Correlation Coefficients

The relationships between the variables in the study were indicated through the use of two different coefficients. When the variables were continuous, the Pearson product-moment correlation coefficient was used. When continuous variables were correlated with dichotomous variables, the Brogden coefficient was used.

Only coefficients that were greater than or equal to 0.308 were discussed, since that is the required Pearson product-moment correlation coefficient for significance at the 0.05 level with 39 degrees of freedom.

Chapter 5

ORGANIZATIONAL STRUCTURE IN FORTY SECONDARY SCHOOLS

This chapter reports the findings about the ten structural variables. It begins with a report of the means, standard deviations and ranges for the structural scores. Subsequently, the inter-correlation of the structural variables, the results of the factor analysis, and the normalized factor scores, are reported.

STRUCTURAL VARIABLES

Scales were used to measure the structural variables specialization, documents, recording of role performance, standardization, centralization and autonomy. A count of positions was used to calculate the variables percentage clerks, percentage nonworkflow and percentage superordinates. Appendix B shows the raw scores for each school on the structural variables.

Relatively wide differences were found among the secondary schools in structural variable scores. Table 5 shows the means, standard deviations and ranges for each structural variable. The size of the standard deviations indicated that the scores were considerably dispersed. For example, documents had a mean of 13, a standard deviation of 5.7 and a range of 3-24 out of a possible 25. The results obtained in this study are comparable to those obtained by the Aston (Pugh et al., 1968b:100-104) and college (Holdaway et al., 1975:44) studies.

Table 5
MEANS, STANDARD DEVIATIONS AND RANGES
FOR STRUCTURAL VARIABLES (N = 40)

Variable	Total No. of Items	Mean Score	Standard Deviation	Range
Specialization	84	52.28	11.45	27 - 83
Documents	25	13.08	5.65	3 - 24
Recording of role performance	8	5.95	1.41	3 - 8
Formalization	33	19.02	6.72	7 - 31
Standardization	26	10.09	2.38	6 - 18
Centralization	75	35.95	5.00	23 - 46
Autonomy	15	8.73	2.14	3 - 14
% Clerks		5.77	2.23	3 - 10
% Nonworkflow		13.49	4.52	12 - 33
% Superordinates		6.37	1.59	4 - 10

Table 6 shows the standardized scores on the structural variables for each school in the sample. The measures afford a comparison of an organization's scores on different variables, such as an organization's formalization score with its centralization score. This makes it possible to set the many scores of an organization side by side as a profile of its structure. For example, school #2 is characterized by high scores on formalization and autonomy, but low scores on standardization and centralization.

RELATIONSHIPS AMONG STRUCTURAL VARIABLES

The intercorrelations between the ten structural variables are shown in Table 7.

Formalization correlated highly with documents ($r = -.99$) and recording of role performance ($r = 0.80$). These correlations were expected since the formalization scores were formed by summing the documents and recording of role performance scores. Similarly, autonomy and centralization were highly negatively correlated ($r = -0.85$). This relationship was also expected in that the same decisions were used to measure both variables.

Centralization had relatively strong negative relationships with documents ($r = -0.38$), recording of role performance ($r = -0.49$) and formalization ($r = -0.43$). On the other hand, autonomy had relatively strong positive relationships with documents ($r = 0.39$), recording of role performance ($r = 0.46$) and formalization ($r = 0.43$). This study suggested that reliance on documents was directly related to decentralization of decision making and to increasing autonomy of,

Table 6

NORMALIZED¹ STANDARD SCORES ON STRUCTURAL VARIABLES FOR THE SAMPLE

School I.D.	Specialization	Documents	Recording of Role Performance	Formalization	Standardization	Centralization	Autonomy	% Clerks	% Nonworkflow	% Superordinates
1	51	48	57	50	55	52	42	51	50	34
2	58	69	57	68	37	24	75	70	52	61
3	39	41	26	40	58	60	42	36	45	43
4	36	46	43	46	75	60	47	39	43	45
5	53	57	57	57	34	40	61	57	55	51
6	32	60	65	62	51	54	61	50	47	34
7	43	57	57	57	44	44	51	55	41	46
8	47	32	36	32	37	44	51	53	39	50
9	52	60	57	60	41	48	56	68	61	54
10	76	68	65	68	34	54	47	38	71	44
11	41	48	50	48	58	52	47	38	34	48
12	74	41	50	43	41	70	23	43	64	37
13	53	39	36	38	44	70	33	43	54	34
14	63	66	57	65	51	52	47	42	44	54
15	45	52	50	51	55	38	61	51	46	63
16	39	36	29	34	48	62	33	40	39	45
17	49	52	57	53	51	46	47	43	52	46
18	49	43	57	46	55	54	47	43	62	57
19	28	59	50	57	75	54	42	42	64	62
20	54	34	43	35	44	60	47	38	42	34
21	43	36	29	34	50	50	61	47	33	63
22	51	55	50	54	37	44	51	53	38	56
23	41	55	65	57	58	42	56	61	43	62
24	54	57	57	57	65	33	61	66	45	61
25	58	50	43	48	41	48	47	42	49	50
26	35	60	43	57	51	62	33	67	79	40
27	41	55	57	56	41	42	56	34	66	61
28	55	53	50	53	48	44	56	48	52	50
29	54	48	50	48	51	50	47	49	42	52
30	45	41	36	40	62	56	42	51	56	53
31	48	37	43	38	55	60	47	37	42	37
32	49	50	50	50	65	62	47	47	41	36
33	61	59	57	59	41	46	56	54	54	54
34	63	57	57	57	55	42	61	65	52	62
35	56	52	50	51	48	46	61	63	45	70
36	55	64	65	65	48	46	61	65	51	55
37	53	43	29	40	55	62	42	60	50	55
38	57	46	43	46	51	46	51	46	54	62
39	49	36	57	40	41	32	61	55	52	42
40	51	37	50	40	48	46	51	51	49	38

¹ Normalization involved a mean of 50 and standard deviation of 10.

Table 7

PRODUCT-MOMENT CORRELATIONS BETWEEN VARIABLES OF STRUCTURE (N = 40)

Variable	Specialization	Documents	Recording of Role Performance	Formalization	Standardization	Centralization	Autonomy	% Clerks	% Nonworkflow	% Superordinates
Specialization	---									
Documents	.17	---								
Recording of role performance	.24	.70	---							
Formalization	.19	.99	.80	---						
Standardization	-.53	-.10	-.18	-.12	---					
Centralization	-.09	-.38	-.49	-.43	.26	---				
Autonomy	.03	.39	.45	.43	-.17	-.85	---			
% Clerks	.11	.41	.28	.40	-.14	-.50	.48	---		
% Nonworkflow	.19	.36	.26	.36	-.18	.11	-.23	.12	---	
% Superordinates	.03	.33	.10	.30	.09	-.56	.53	.37	-.03	---

the organization. This suggestion implied that documents may have been used to control a decentralized decision making process. These results were similar to those found by Heron (1972) and Aston (Pugh et al., 1968b), but somewhat different from that obtained by Newberry (1971). Newberry (1971:73) concluded that the greater the amount of centralized decision making the greater the reliance on documents to define and record role performance.

This study, like the Heron (1972) and the Aston studies (Pugh et al., 1968b), found a strong negative relationship between autonomy and centralization ($r = -0.85$). Thus decentralized decision making was associated with autonomy. However, Heron (1972: 115) points out the reverse also seems possible. Centralized decision making at the chief executive level was associated with increased involvement by boards in school operation.

Specialization had a strong negative relationship with standardization ($r = -0.53$). This finding suggested that when the activities of the school were more differentiated, fewer standardized procedures tended to be used. It would appear that schools which were highly specialized, may have been regarded as being more professionalized and therefore requiring fewer standardized procedures. This suggestion has been made by Hage and Aiken (1967) and Blau and Schoenherr (1971). Specialization did not correlate with any other structural variables to any appreciable degree. This finding was more in accord with Holdaway et al. (1975) and Kelsey (1973), but differed from the Aston (Pugh et al., 1968b) and Heron (1972) studies.

Of the three configuration variables, percentage

superordinates related positively to percentage clerks ($r = 0.37$), showing that a tendency existed for schools which had higher percentages of superordinates to also have higher percentages of clerical staff. This result was in accord with the findings of Holdaway et al. (1975), Blau and Schoenherr (1972) and Anderson and Warkov (1961).

Documents were positively related to percentage clerks ($r = 0.41$), to percentage nonworkflow ($r = 0.36$) and to percentage superordinates ($r = 0.33$). These data showed that schools with larger percentages of both nonworkflow personnel and superordinates tended to rely to a greater extent on documents to specify role behavior.

Percentage clerks and percentage superordinates were both negatively related to centralization ($r = -0.50$ and $r = -0.56$ respectively) and positively related to autonomy ($r = 0.48$ and $r = 0.53$ respectively). This relationship suggested that schools with greater decision making autonomy had a greater percentage of support staff. A decrease in the percentage of support staff was associated with more centralized decision making.

FACTOR ANALYSIS OF STRUCTURAL VARIABLES

Table 8 presents the results of applying principal-components analysis, using orthogonal varimax rotation as discussed by Harmon (1960), to the eight structural variables. The FACTO4 statistical program produced by the Division of Educational Research Service of the University of Alberta, provided solutions of two, three, four, and five factors. The three-factor solution was

Table 8

FACTOR ANALYSIS OF EIGHT STRUCTURAL VARIABLES

Variables	Commun- alities	Factor I	Factor II	Factor III
Autonomy	.87	.91	-.10	-.16
Centralization	.86	-.90	.18	.07
% Superordinates	.57	.74	.16	.07
% Clerks	.53	.66	-.09	.29
Standardization	.81	-.09	.90	-.03
Specialization	.71	.01	-.83	.16
Formalization	.70	.43	-.09	.64
% Nonworkflow	.85	-.15	-.14	.90
Eigen Values	5.89	2.94	1.59	1.37
Percent of Common Variance				
	100.00	49.82	26.94	23.23
Percent of Total Variance				
	73.66	36.70	19.84	17.11

Note: Factor loadings in boxes are $>|0.60|$.

selected because it was the lowest solution producing acceptable eigen values (≥ 1) and also showing discrete factor loadings for each variable, i.e. $>|0.6|$.

A four-factor solution accounted for 81.65 per cent of the total variance and showed one variable loading higher than 0.40 on more than one factor. The two-factor solution accounted for 59.43 per cent of the total variance and also showed one variable loading above 0.40 on more than one factor. The three-factor solution accounted for 73.66 per cent of the total variance and showed one variable loading above 0.40 on more than one variable. Factor I was described by autonomy, centralization, percentage superordinates and percentage clerks; Factor II by standardization of procedures and specialization; and Factor III by formalization and percentage nonworkflow.

Factor I described that dimension of structure related to the loci of decision making. Schools where decisions were made within the organization tended to have a greater percentage of superordinates and clerks. These activities were associated with a high degree of autonomy (high Factor I scores). Conversely, with decreasing percentage of support personnel, decision making became more centralized and autonomy decreased. These were the schools with low Factor I scores. Because these variables appeared to be concerned with measures designed to indicate where the decisions were made, this factor was previously referred to by Heron (1972:133) as Dispersion of Authority. This name was retained in this study.

Factor II described quite a different aspect of structure,

that related to the degree of standardization of procedures and the specialization of nonworkflow activities. Closer examination of the loadings revealed that schools scoring high on this factor tended to be highly standardized, but low in specialization. Conversely, schools scoring low on this factor tended to be less standardized, but had greater specialization in the nonworkflow activities. Consequently, this factor was named after its highest loading variable, and referred to as Standardization.

The third factor had its highest loadings for percentage nonworkflow and formalization. Schools scoring high on Factor III tended to have a larger proportion of nonworkflow personnel and tended to be more structured through the usage of documents. The fact that the formalization dimension did not load on Factor I suggests that this measure was primarily a configurational one. In other words, it tended to reflect more the shape of the organization than the structuring component. Consequently Factor III was named Nonworkflow Proportion.

COMPARISON WITH ASTON FACTORS

Table 9 shows the factor loadings of the variables in the original Aston study. Examination of the two tables (Table 8 and 9) reveals considerable differences existed between the two studies.

In both studies autonomy, centralization and percentage superordinates loaded on one factor; Dispersion of Authority in this study and Concentration of Authority in the Aston study. However, in this study (Table 8) these variables loaded on Factor I and accounted

Table 9

ASTON FACTOR ANALYSIS OF TEN STRUCTURAL VARIABLES
(Pugh et al., 1968b:85)

Variable	Factors and Factor Loadings			
	I	II	III	IV
	Structuring of Activities	Concentration of Authority	Line Control of Workflow	Relative Size of Supportive Component
Specialization	.87	-.33	.01	-.13
Formalization	.87	.14	-.21	.17
% Non-workflow	.58	-.43	.06	.41
Chief Exec. Span	.42	.23	-.07	-.03
Centralization	.33	.83	.01	.21
Autonomy	.10	-.92	.00	-.13
% Superordinates	-.23	.60	.50	-.22
Standardization	.40	.59	.50	.09
Subordinate Ratio	-.05	.19	-.80	-.06
% Clerks	.40	-.09	.42	.67
Percent of Total Variance				
	33.06	18.47	12.96	8.20

for 36.70 per cent of the total variance, whereas in the original Aston study these variables loaded on Factor II and accounted for 18.47 per cent of the total variance. Percentage clerks also loaded on Factor I, whereas in the original Aston study it loaded above 0.40 on three factors.

In the Aston analysis the variables specialization, formalization and percentage nonworkflow loaded on Factor I, Structuring of Activities, and accounted for 33.06 per cent of the total variance. This alignment of variables was quite different in the school analysis, for which formalization and percentage nonworkflow loaded on Factor III, Nonworkflow Proportion, and accounted for 23.23 per cent of the total variance. Whereas specialization loaded negatively with standardization of personnel procedures on Factor II, Standardization, and accounted for 26.94 per cent of the total variance. Only standardization made up Factor II in both studies, but in the Aston study this variable had loadings above 0.40 on three factors.

Other differences in the relationships between the structural variables were also found in the two studies. In the present study specialization loaded negatively (-0.83) on Factor II, whereas in the Aston study it was an important contributor to Factor I (0.87).

COMPARISON WITH COLLEGE FACTORS

The structural factors found in this study also differed considerably from those found in the colleges study (Table 10). In both centralization and autonomy loaded above 0.40 on Factor I. In

Table 10

COLLEGE FACTOR ANALYSIS OF TEN STRUCTURAL VARIABLES
(Holdaway et al., 1975:46)

Variable	Factors and Factor Loadings		
	I	II	III
	Bureaucratic Control	Administrative Configuration	Nonworkflow Proportion
Formalization	.82	.17	.01
Standardization of personnel procedures	.73	.27	-.27
Centralization	.92	-.13	.18
Autonomy	-.92	-.01	-.07
Specialization	.28	.63	-.07
Chief Executive Span	-.06	-.80	-.01
% Superordinates	-.06	.84	-.06
% Clerks	.14	.61	-.38
Subordinate Ratio	.19	-.66	-.57
% Nonworkflow	.21	-.15	.82
Percent of Total Variance	30.9	27.0	12.7

Note: Factor loadings greater than |.40| are shown in boxes.

the present study these two variables were associated with percentage superordinates and percentage clerks, whereas in the college analysis standardization of personnel procedures and formalization loaded in Factor I. These two latter variables in the present study loaded on Factor II (specialization) and Factor III (formalization).

In the college analysis, functional specialization, percentage superordinates and percentage clerks loaded on Factor II, Administrative Configuration. This alignment of variables was quite different from that obtained for the secondary schools, for which only functional specialization (negative) loaded on Factor II, along with standardization.

Few similarities were likewise evident in Factor III in both analyses. Both studies produced high positive loadings for percentage nonworkflow. For the college study, however, Factor III was dominated by a negative loading for subordinate ratio (-0.57), whereas in the secondary school study this association was with formalization (0.64). These latter variables all had at least one loading on another factor of 0.40 or higher.

In order to complete the discussion of factor analysis in educational organizations, Heron's (1972) study of five Alberta colleges has been included (see Table 11). Heron matched the college factors with the Aston factors by the Ahmavaara method. He found (1972:136) that the match between the first factors was 0.99 , between the second was -0.94 , and between the third was 0.71 . His factors approximated very closely those of Aston, and hence do not require any further elaboration.

Table 11

FACTOR ANALYSIS OF TEN STRUCTURAL VARIABLES (N = 77)
(Heron, 1972:123)

	Commun- alities	Factor I	Factor II	Factor III
Specialization	.818	.819	.363	.126
Formalization	.912	.973	.385	-.035
Standardization	.562	.618	.234	.355
% Clerks	.772	.549	.475	-.495
% Non-workflow	.784	.821	-.225	.208
Centralization	.798	-.214	-.821	.289
Autonomy	.745	.323	.797	.060
Chief Exec. Span	.556	.021	-.710	-.226
Subordinate Ratio	.623	-.193	-.007	-.765
% Superordinates	.715	.114	.062	.836
Eigen Values	7.285	3.007	2.429	1.850
% Common Variance	100.00	41.27	33.33	25.10
% Total Variance	72.85	30.07	24.28	18.50

Inspection of these four analyses in Tables 8, 9, 10 and 11 readily revealed that secondary schools and colleges had more discrete factor loadings than the Aston work organizations. Some of the reasons stated by Holdaway et al. (1975:48) appear to be applicable to both analyses. The functions of the forty secondary schools were generally similar, whereas the Aston data were gathered from fifty-two work organizations having differing functions. The larger size of the Aston organizations probably affected the clustering on the factors. Also, the nature of the work performed by the staff in educational organizations is so different, as well as the type and amount of formal training, that differences in supervisory practices are bound to exist. Finally, Kelsey (1973:200) in noting that the relationship between functional specialization and other structural variables was not the same as occurred in the Aston study, commented that:

This result may be seen as confirming the point of view which led to such a sweeping adaptation of the instrument, namely, that what the Aston studies called Functional Specialization is not something which can be observed in individual schools.

Riemann's (1973) comparative study of nineteen United States manufacturing organizations is noteworthy in regard to the results obtained in this study. Factor analysis of the data resulted in three independent dimensions of Decentralization, Specialization and Formalization. He concluded (1973:471) that the results implied that bureaucratic structure may conform to the equifinality principal, in that a variety of structural arrangements appear to be equally viable strategies for the various samples of organizations.

In summary, the variations in the results of factor analysis

indicated that distinct differences existed among the structures of the groups of organizations in the present, college and Aston studies. That is, there were different clustering of the selected variables upon different factors.

STRUCTURAL FACTOR SCORES

Factor analysis revealed that eight structural variables clustered to form three underlying dimensions of structure.

Table 12 shows the standardized three-factor scores (rounded to the nearest whole number) for each secondary school. A school with high Factor I scores tended to have high autonomy to make decisions within the organization. A low Factor I score indicated the reverse situation to that just described.

A high score on Factor II indicated a school that utilized highly standardized procedures and performed few specialized nonworkflow activities.

High scores on Factor III indicated a school with a higher proportion of nonworkflow personnel. The school also utilized more documents to define and record its task activities compared to a school with a low Factor III score.

The standardized scores also allows for a comparison of the factors for each school. For example, the profile for school #2 indicates high scores on Factors I and III, but a low score on Factor II. This suggests that school #2 would be characterized by high decision making autonomy and a high proportion of nonworkflow personnel, but low on the utilization of standardized procedures.

Table 12
STRUCTURAL FACTOR SCORES¹

School I.D.	Factor I Dispersion of Authority	Factor II Standardization	Factor III Nonworkflow Proportion
1	45	50	50
2	76	40	64
3	38	61	40
4	40	68	43
5	60	44	58
6	47	66	57
7	54	55	51
8	54	50	32
9	57	47	63
10	43	24	73
11	45	60	41
12	29	28	51
13	31	46	44
14	47	39	58
15	61	55	49
16	36	59	33
17	49	51	53
18	46	52	53
19	46	75	62
20	38	45	36
21	54	57	30
22	55	46	47
23	60	60	52
24	68	50	53
25	48	41	48
26	42	63	69
27	54	56	62
28	54	45	53
29	49	47	45
30	46	57	46
31	38	53	38
32	40	54	45
33	55	38	58
34	62	40	56
35	61	44	48
36	59	45	61
37	45	49	43
38	53	44	49
39	62	49	43
40	51	42	42

¹Mean of 50 and a standard deviation of 10.

SUMMARY

Differences were found among the schools on all ten structural variables as indicated by the ranges and standard deviations. These measures were similar to those obtained by the Aston and college studies, indicating that the instrument could discriminate dimensions of structure in a sample of secondary schools.

Intercorrelating the scales resulted in variables clustering into three groups. The first group of variables consisted of autonomy, centralization, percentage clerks and percentage superordinates, which all intercorrelated at $r = 0.48$ or higher. The second group of variables included formalization, documents, recording of role performance and percentage nonworkflow. The third group of variables consisted of specialization and standardization ($r = -0.53$), and were not strongly associated with any other variables.

Factor analysis resulted in a three-factor solution being accepted. These factors were named Dispersion of Authority, Standardization and Nonworkflow Proportion. The structural factors found in this study showed considerable differences from those reported by the Aston and college studies. Autonomy and centralization scales loaded on Factor I in this study, whereas these variables constituted Factor II in the Aston study and Factor I in the college study. The Aston Structuring of Activities variables constituted Factor I and II in the college study and Factor II and III in this study. Similar differences were found on the third factor. Where the Aston researchers discerned four factors to describe organizational structure, only three factors were found in the present and

college studies.

The separation of specialization from the other structuring variables (in present and college studies) was noted. Finally, it was shown that the factor loadings obtained in the present and college studies were more discrete than the original Aston factors. This may have been caused by a number of factors including the size of the organizations investigated, the nature of the work performed by the various staffs, and that relationships in different organizations may have differing meaning.

Chapter 6

THE RELATIONSHIPS OF CONTEXT AND ORGANIZATIONAL BEHAVIOR IN FORTY SECONDARY SCHOOLS

This chapter provides findings related to three areas. It examines the extent of relationships among (1) the contextual variables, (2) the behavioral variables, and (3) the contextual and behavioral variables.

CONTEXTUAL VARIABLES

The study included nine contextual variables, of these, seven were continuous and the other two were dichotomous. When the relationship was between continuous variables, Pearson product-moment correlation coefficients were used. When the relationship was between a dichotomous and a continuous variable, the Brogden coefficient was used.

Raw scores for each school on each variable are indicated in Appendix B.

Intercorrelations of Contextual Variables

Correlation coefficients were calculated for each pair of contextual variables. The coefficients are shown in Tables 13 and 14.

Continuous variables. The Pearson product-moment correlation coefficients are shown in Table 13. The three size measures correlated strongly and positively. Size (students) and size (professional staff) had a correlation of $r = 0.95$. The two measures in turn, correlated

Table 13

PRODUCT-MOMENT CORRELATIONS BETWEEN CONTINUOUS VARIABLES OF CONTEXT (N = 40)

Variable	Size (students)	Size (professional staff)	Size (total employees)	Age	% Manpower Turnover	Principal (total experience)	Principal (experience in present school)
Size (students)	---						
Size (professional staff)	.96	---					
Size (total employees)	.95	.99	---				
Age	-.23	-.27	-.27	---			
% Manpower Turnover	-.06	-.05	-.02	-.22	---		
Principal (total experience)	.00	.04	.01	-.03	.02	---	
Principal (experience in present school)	.16	.12	.09	.04	-.08	.57	---

Table 14

BROGDEN CORRELATION COEFFICIENTS BETWEEN DICHOTOMOUS
AND CONTINUOUS CONTEXTUAL VARIABLES (N = 40)

Variable	Size (students)	Age	% Manpower Turnover	Principal (total experience)	Principal (experience in present study)
Location	-.63	-.29	.44	.10	-.17
Charter	-.47	-.42	.22	.35	-.08

Note: Significant correlations are $> |0.40|$.

strongly with size (total employees) at $r = 0.95$ and $r = 0.99$ respectively. The results were in agreement with those of Newberry (1971) and Heron (1972). Hall (1972:111) in a review of the research on size concluded that these measures are interchangeable for research purposes. Therefore, the decision was made to use only the variable size (students) in any subsequent investigations of size and other variables.

Size did not relate to any other contextual variables. In fact, only one other set of contextual variables intercorrelated. Principal (experience in present school) correlated with principal (total experience) at $r = 0.57$. These results are interesting in that it suggested that the size of the school was not contingent on age. Additionally, size did not determine the extent of staff turnover.

Continuous variables and dichotomous variables. The relationships between the continuous and dichotomous variables, as indicated by the Brogden coefficient, are shown in Table 14. The nature of the Brogden coefficient (Brogden, 1949) meant that only GBR's ≥ 0.40 were considered as being significant correlations.

Location was negatively related to size ($r = -0.63$) and positively to percentage manpower turnover ($r = 0.44$). These relationships indicated that the urban schools tended to be larger in size and that they tended to have a lower turnover in staff than rural schools.

Charter was negatively related to size ($r = -0.47$) and age ($r = -0.42$). These relationships indicated that Saskatchewan

secondary schools tended to be older and larger than Manitoba secondary schools.

Normalized Contextual Scores

Table 15 shows the standardized scores for each contextual variable (rounded to the nearest whole number). Normalization involved a mean of fifty and a standard deviation of ten.

BEHAVIOR VARIABLES

The study included eight behavioral variables as measured by the OCDQ. Of these, four described teacher behavior and the other four described principal behavior. The raw scores for each school on each variable (or subtest) are shown in Appendix B.

The relationships which existed among the subtest scores of the OCDQ are of interest in determining the extent to which certain behaviors of teachers and principals occur and vary together. Examination of the Pearson product-moment correlations in Table 16 indicated that some of the subtests of the instrument correlate highly with one another. When these subtests were presented graphically, a number of patterns emerged. Solid lines indicate a significant positive correlation, while the dotted lines indicate a significant negative correlation. The relationships are shown in Figure 1.

The variable esprit correlated strongly with thrust ($r = 0.47$), consideration ($r = 0.62$) and intimacy ($r = 0.49$). This relationship suggested that in schools where the principals set an example by working hard themselves and took a personal interest in the well-being of their staff, teachers experience high morale and

Table 15

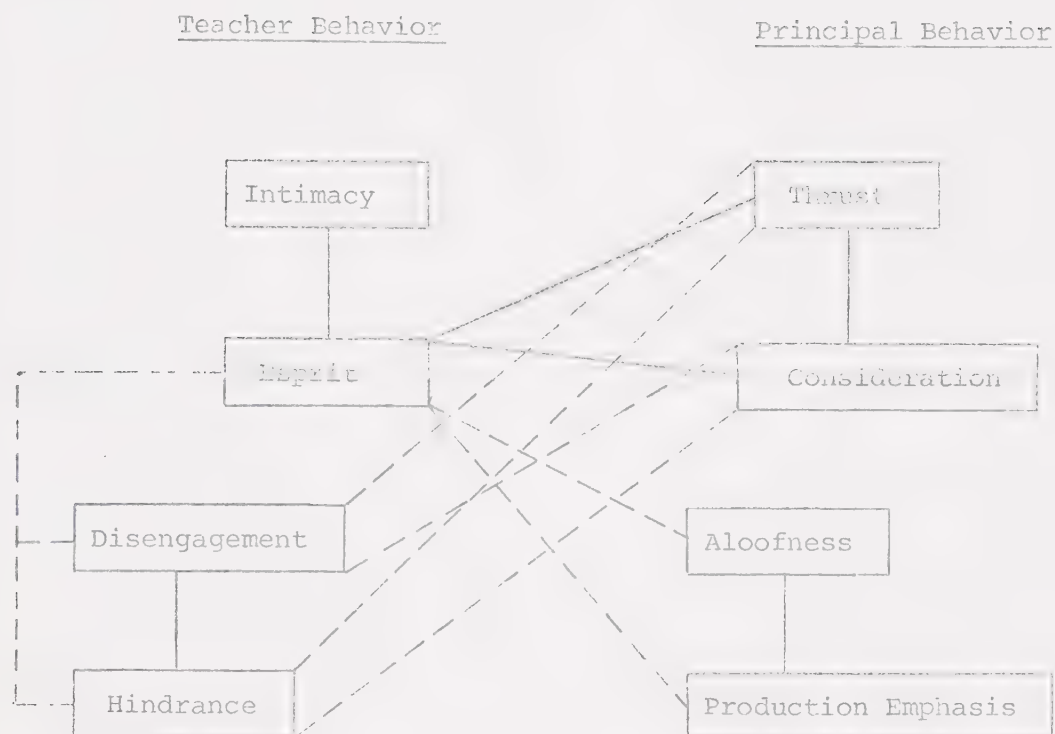
NORMALIZED STANDARD SCORES ON CONTEXTUAL VARIABLES

School I.D.	Size (enrolment)	Age	% Manpower turnover	Principal (total experience)	Principal (school experience)
1	44	42	53	42	40
2	59	43	41	54	51
3	41	51	50	54	43
4	39	46	50	41	43
5	65	43	46	44	43
6	45	42	49	41	43
7	48	46	39	68	56
8	57	47	56	68	62
9	52	48	45	39	40
10	47	43	43	42	46
11	40	43	61	63	64
12	44	43	56	41	43
13	44	77	40	54	40
14	51	51	62	39	40
15	41	75	61	40	43
16	37	46	36	44	48
17	54	64	46	44	48
18	59	45	39	42	46
19	43	45	71	46	51
20	43	47	42	63	40
21	40	50	47	39	40
22	50	52	43	44	48
23	52	47	54	58	70
24	63	45	57	42	46
25	75	47	58	39	40
26	42	45	77	58	54
27	65	46	57	54	46
28	73	47	47	51	59
29	57	46	39	59	72
30	40	53	47	46	51
31	43	46	36	54	64
32	47	42	62	42	46
33	72	47	50	58	70
34	46	67	43	41	43
35	41	75	41	39	40
36	54	49	43	44	40
37	43	44	63	49	56
38	46	75	36	61	75
39	52	41	45	71	40
40	44	43	64	70	51

Table 16

PRODUCT-MOMENT CORRELATIONS BETWEEN VARIABLES OF BEHAVIOR (N = 40)

Variable	Disengagement	Hindrance	Esprit	Intimacy	Alloofness	Production Emphasis	Thrust	Consideration
Disengagement	---							
Hindrance	.47	---						
Esprit	-.53	-.44	---					
Intimacy	.05	-.19	.49	---				
Alloofness	.08	.30	-.46	-.23	---			
Production Emphasis	.27	.27	-.37	.09	.60	---		
Thrust	-.40	-.34	.47	.03	-.12	.04	---	
Consideration	-.43	-.50	.62	.27	-.24	-.03	.85	---



Legend: Significant

———— positive correlation
 - - - - - negative correlation
 $r \geq .308$

Figure 1

INTERCORRELATIONS OF BEHAVIOR VARIABLES

displayed friendly relations toward one another. This cluster of characteristics, however, was negatively related to the teacher behaviors of disengagement and hindrance, which are themselves closely allied ($r = 0.47$). This seemed to indicate that the tendency for teachers to be out of touch with their educational function occurred at the same time that they feel burdened by administrative responsibilities.

Finally, the principals' behaviors of aloofness and production emphasis correlated positively ($r = 0.60$) with each other, but negatively with esprit ($r = -0.46$ and $r = -0.37$ respectively). This implied that administrative behavior which was characterized as being formal and impersonal, and where staff supervision was constrictive, was manifested in low staff morale. Thus in this sample, schools scoring high on esprit and average on intimacy tended to score low on the disengagement and hindrance subscales. Their subscales scores were high on the principal dimensions of thrust and consideration, but low on the aloofness and production emphasis subscales. For low scoring schools, the reverse situation occurred. The above results were in agreement with previous research (McKague, 1968; Andrews, 1965; and Brown, 1965).

Behavioral Standard Scores

Table 17 shows the normalized and standardized scores for the eight behavioral subtests. Normalization entailed a mean of fifty and a standard deviation of ten. Comparisons can now be made among the subscales for each school and among schools. For example, school #2 is characterized as being high on the dimensions of esprit,

Table 17

NORMALIZED STANDARD SCORES ON BEHAVIOR VARIABLES FOR THE SAMPLE

School I.D.	Disengagement	Hindrance	Esprit	Intimacy	Alcoolism	Production Emphasis	Thrust	Consideration
1	49	53	48	46	59	54	61	48
2	40	40	69	60	32	47	63	70
3	54	52	45	43	58	62	59	54
4	55	53	39	52	59	67	51	44
5	53	46	55	48	36	14	61	56
6	41	35	57	60	55	54	56	53
7	50	45	49	51	30	30	29	39
8	42	32	48	33	56	55	45	47
9	54	45	43	38	42	46	47	42
10	53	34	64	64	51	50	51	63
11	60	74	24	30	78	66	42	33
12	37	54	75	70	48	58	60	59
13	64	60	39	54	60	57	27	27
14	48	48	60	55	43	46	53	53
15	48	56	57	49	53	46	61	64
16	66	53	37	36	64	64	53	50
17	49	59	45	37	44	36	42	38
18	65	54	40	55	41	40	39	48
19	86	54	37	68	46	60	38	37
20	47	57	50	67	67	64	50	55
21	50	61	49	43	39	48	51	44
22	39	39	57	47	49	50	63	61
23	51	68	50	51	45	62	34	33
24	62	66	51	60	54	59	47	50
25	47	43	65	55	28	34	62	58
26	44	38	48	59	53	53	42	43
27	63	65	35	48	51	57	49	45
28	59	43	61	49	45	38	55	60
29	41	38	52	51	56	41	50	45
30	39	41	45	45	57	41	45	44
31	38	43	40	50	47	48	64	64
32	47	48	44	42	47	65	51	50
33	45	60	48	42	55	34	23	29
34	43	45	57	53	37	36	58	54
35	51	51	61	70	50	45	52	53
36	53	61	49	37	47	38	53	52
37	47	38	47	51	46	54	48	60
38	34	48	59	42	54	42	57	57
39	47	58	48	38	60	48	53	55
40	37	42	54	52	55	59	57	61

intimacy, thrust and consideration, but low on disengagement, hindrance, aloofness and average on production emphasis.

RELATIONSHIP BETWEEN CONTEXT AND BEHAVIOR

The relationships between the behavioral and contextual variables are examined in this section. Initially, the continuous contextual variables are related to the behavioral variables using Pearson product-moment correlations. Following this, the dichotomous contextual variables are related to the behavioral variables using the Brogden correlation coefficient.

Continuous Contextual Variables

The Pearson product-moment correlation coefficients between the behavioral variables and the continuous contextual variables are shown in Table 18.

A number of significant relationships were found. Size (students) correlated negatively with aloofness ($r = -0.43$) and production emphasis ($r = -0.48$). This suggested that as the size of the schools increased the principals tended to exhibit behavior which was considered as being less formal and impersonal, and tended to supervise their staff less closely. This result supports McWilliams' (1967), Corwin's (1970) and Triandis' (1966) findings.

Production emphasis was positively related to percentage manpower turnover ($r = 0.37$). This implied that as principals increased their supervision over their staff, there was a tendency for a higher staff turnover. Whether close supervision causes higher staff turnover, cannot be determined from this study, however Corwin's

Table 18

PRODUCT-MOMENT CORRELATIONS BETWEEN CONTINUOUS CONTEXTUAL
VARIABLES AND BEHAVIORAL VARIABLES (N = 40)

Variable	Size (students)	Age	% Manpower Turnover	Principal (total experience)	Principal (experience in present school)
Disengagement	.07	-.04	.13	-.20	-.19
Hindrance	-.00	.16	.05	.06	-.07
Esprit	.25	.08	-.07	-.23	-.16
Intimacy	-.05	-.01	.13	-.27	-.24
Aloofness	-.43	.06	.06	.37	.15
Production Emphasis	-.48	-.24	.36	.10	-.10
Thrust	-.07	-.05	-.09	-.29	-.35
Consideration	.03	-.10	-.11	-.15	-.26

Note: Values $r \geq .31$ are significant beyond the .05 level.

(1970) work on professionalism certainly suggests this.

Principal (total experience) was related to aloofness ($r = 0.37$), indicating that administrators with increasing experience tended to exhibit behavior toward their teachers which was perceived as being more formal and impersonal.

Finally, Principal (experience in present school) had a negative relationship with thrust ($r = -0.35$), implying that principals with increasing experience within the same school tended to motivate their staffs to a lesser degree through example of hard work. By inference one would claim that administrators are perceived as being less hard working the longer they remain within their present schools.

Intercorrelation of the teacher behavior variables and continuous contextual variables did not produce any significant correlations. This lack of significant correlations suggested that the teacher variables were not affected by the contextual variables used. In other words, size and age do not produce a greater or lesser degree of disengagement, hindrance, esprit or intimacy. It was anticipated that the structural variables would explain more of these relationships.

Dichotomous Contextual Variables

The Brogden correlation coefficients between the behavioral and the dichotomous contextual variables are shown in Table 19.

Location was positively related to aloofness ($r = 0.52$) and production emphasis ($r = 0.88$). Rural principals tended to be more formal and impersonal in their behavior and tended to supervise their

Table 19

BROGDEN CORRELATION COEFFICIENTS BETWEEN DICHOTOMOUS
AND BEHAVIOR VARIABLES (N = 40)

Variable	Disengagement	Hindrance	Esprit	Intimacy	Alloofness	Production Emphasis	Thrust	Consideration
Location	.16	.01	-.25	.26	.52	.88	.05	-.03
Charter	.15	-.04	-.41	-.20	.25	.69	-.15	-.24

Note. Significant correlations are $> |0.40|$.

staffs more closely (to ensure a high level of performance) than urban principals.

Charter was negatively related to esprit ($r = -0.41$) and positively to production emphasis ($r = 0.69$). Saskatchewan teachers felt that their social and task accomplishment needs were better satisfied than their Manitoba counterparts. Manitoba principals also tended to supervise their staff more closely to ensure a high level of performance.

SUMMARY

Intercorrelation of the seven contextual variables resulted in a number of significant correlations. The three size variables—size (students), size (professional staff) and size (total employees)—all intercorrelated above $r = 0.95$. Therefore in subsequent analysis only one measure of size (students) was used.

The variable charter was negatively related to size (students) and age, indicating that Saskatchewan schools tended to be larger and older than the Manitoba secondary schools. The variable location was negatively associated with size (students), but positively with percentage manpower turnover, indicating that rural schools tended to be smaller, but had a higher staff turnover.

A number of relationships existed among the subtest scores of the OCDQ which examined teacher and principal behavior. The variables esprit and intimacy related positively with consideration and thrust, but negatively with disengagement and hindrance. Disengagement and hindrance in turn, associated negatively with

thrust and consideration. Also the variable esprit had a negative association with aloofness and production emphasis. Intercorrelations between the subtest scores of the OCDQ revealed a pattern of behavior consistent with the findings of other studies.

Intercorrelation of the contextual and behavioral variables provided a number of interesting results. Size (students) was related negatively with aloofness and production emphasis, suggesting a tendency for principals in larger schools to be less formal and impersonal and less close in their supervision of staff. Principal (total experience) was associated with aloofness, whereas principal (experience in present school) was negatively related to thrust. Intercorrelation of the teacher behavioral and continuous contextual variables did not result in any significant correlations suggesting that the teachers' social and task accomplishment needs are influenced by other variables.

When the dichotomous contextual variables were intercorrelated with the behavioral variables, location was shown to be positively related to aloofness and production emphasis. Urban principals showed a tendency to be less formal and impersonal, and less close in their supervision of staff. Charter had a negative association with esprit, but a positive association with production emphasis. Saskatchewan schools tended to have higher teacher morale and the principals were perceived as tending to be less close in their supervision of staff.

Chapter 7

RELATIONSHIPS OF STRUCTURE AND CONTEXT IN FORTY SECONDARY SCHOOLS

This chapter reports the findings of the study concerning the relationships between structure and context. The interrelationships of structural and contextual variables are reported first followed by the interrelationships of the structural factors and the contextual variables.

RELATIONSHIPS BETWEEN STRUCTURAL VARIABLES AND CONTEXTUAL VARIABLES

Relationships between the structural and continuous contextual variables are reported first followed by the relationships of the structural and dichotomous variables.

Continuous Contextual Variables

The Pearson product-moment correlation coefficients between the structural variables and the continuous contextual variables are shown in Table 20.

Specialization was positively associated with size ($r = 0.31$). This finding suggested that as the size of the secondary school increased, there was a tendency for greater differentiation of the nonworkflow activities.

The variable size (students) was positively associated with documents ($r = 0.34$), recording of role performance ($r = 0.40$) and formalization ($r = 0.37$). This finding indicated that as the size of

Table 20

PRODUCT-MOMENT CORRELATIONS BETWEEN STRUCTURAL VARIABLES
AND CONTINUOUS CONTEXTUAL VARIABLES (N = 40)

Variable	Size (students)	Age	% Manpower Turnover	Principal (total experience)	Principal (experience in present school)
Specialization	.31	.12	-.26	-.18	-.06
Documents	.34	-.03	.14	-.33	-.06
Recording of role performance	.40	-.16	-.04	-.09	-.10
Formalization	.37	-.08	.11	-.29	-.07
Standardization	-.41	.04	.34	-.19	.02
Centralization	-.51	-.02	.11	-.18	.02
Autonomy	.39	.05	-.22	.03	-.06
% Clerks	.16	.03	.06	-.03	.00
% Nonworkflow	.17	-.06	.24	-.12	-.09
% Superordinates	.24	.35	-.02	-.21	.11

the school increased, the number of documents defining role and performance also tended to increase. In other words, greater size tended to result in greater formalization. The negative relationship between documents and principal (total experience) of $r = -0.33$, indicated the tendency for more experienced administrators to use fewer documents.

The relationship between size and the structural variables specialization and formalization obtained in this study tended to support the Aston (Pugh et al., 1969a), Newberry (1971), Heron (1972) and Blau and Schoenherr (1971) findings.

Standardization was negatively associated with size ($r = -0.41$) and positively with percentage manpower turnover ($r = 0.34$). This relationship suggested that smaller schools tended to standardize procedures to a greater extent, and also tended to have a higher turnover rate in personnel. This is in contrast to Corwin's (1970) finding, in that his results suggested that larger schools were more standardized and had a higher manpower turnover.

The relationships between size and centralization ($r = -0.51$) and autonomy ($r = 0.39$) could be explained by the fact that larger secondary schools tended to have greater decision making discretion and tended to be less centralized. The smaller schools, in turn, tended to be more centralized and tended to have less decision making discretion (autonomy). The result is also supported by the size-documents and documents-centralization relationship. The finding supports the Heron (1972) and Reimann (1973) results.

One significant relationship resulted when the three

101

configuration variables were interrelated with the continuous contextual variables. Percentage superordinates was related to age ($r = 0.33$) suggesting that older secondary schools tended to have a greater proportion of supervisory staff. Heron (1972) reported a tendency for organizations to become more hierarchically differentiated with age.

Dichotomous Contextual Variables

The Brogden correlation coefficients between the structural variables and the dichotomous contextual variables are shown in Table 21.

Location was associated with centralization ($r = 0.69$) and autonomy ($r = -0.59$). The positive relationship with centralization indicated that rural schools tended to be more centralized and tended to have less decision making discretion within the school. Conversely, the urban schools tended to be less centralized and tended to have greater within school decision making discretion. Corwin (1970) reported a similar finding.

Charter was related negatively to specialization ($r = -0.65$) and percentage superordinates ($r = -0.43$). These negative relationships indicated the tendency for Saskatchewan secondary schools to perform a greater number of nonworkflow activities and to have a larger number of superordinates than did Manitoba schools. Recalling that Saskatchewan schools were older, it could be inferred that structurally the schools have become "taller" with age, a finding reported by Heron (1972) in his study of Alberta colleges.

Table 21

BROGDEN CORRELATION COEFFICIENTS BETWEEN STRUCTURAL VARIABLES
AND DICHOTOMOUS CONTEXTUAL VARIABLES (N = 40)

Variable	Location	Charter
Specialization	-.38	-.65
Documents	-.25	-.26
Recording of role performance	-.39	-.31
Formalization	-.29	-.28
Standardization	.37	.07
Centralization	.69	.17
Autonomy	-.59	-.09
% Clerks	-.23	.13
% Nonworkflow	.03	-.31
% Superordinates	-.70	-.43

Note: Significant correlations are $>|0.40|$.

RELATIONSHIPS BETWEEN STRUCTURAL FACTORS AND CONTEXTUAL VARIABLES

The Pearson product-moment correlation coefficients showing the relationships between the continuous contextual variables and the structural factors are shown in Table 22. The Brogden coefficients showing the relationships between the structural factors and the dichotomous contextual variables are shown in Table 23.

The Dispersion of Authority factor, which consisted of the variables centralization, autonomy, percentage superordinates and percentage clerks, was positively associated with size ($r = 0.44$). These results indicated that the larger schools tended to have greater autonomy and tended to be less centralized in their decision making process. Additionally, the larger schools tended to have a greater number of superiors and clerical personnel to assist with the activities. The finding that as size increased the schools responded by becoming more decentralized and increasing the number of supervisory personnel supports Heron's (1972) study.

The Standardization factor was negatively related to size ($r = -.36$). This association suggested that with an increase in enrolments, schools showed a tendency to utilize fewer standardized procedures. Also, the number of nonworkflow activities performed and the number of different delegates tended to increase with size.

Nonworkflow Proportion correlated positively with size ($r = 0.35$), suggesting a tendency for the proportion of nonworkflow personnel to increase with the size of the secondary school. As well, this factor suggested that the extent to which procedures,

Table 22

PRODUCT-MOMENT CORRELATION COEFFICIENTS BETWEEN STRUCTURAL
DIMENSIONS AND CONTINUOUS CONTEXTUAL VARIABLES (N = 40)

Variable	Dispersion of Authority	Standardization	Nonworkflow Proportion
Size (students)	.44	-.36	.35
Age	.03	-.10	-.09
% Manpower Turnover	-.10	.29	.19
Principal (total experience)	.06	.11	-.27
Principal (experience in present school)	.03	.06	-.10

Table 23

BROGDEN CORRELATION COEFFICIENTS BETWEEN STRUCTURAL DIMENSIONS
AND DICHOTOMOUS CONTEXTUAL VARIABLES (N = 40)

Dimension	Location	Charter
Dispersion of Authority	-.68	-.15
Standardization	.41	.58
Nonworkflow Proportion	-.20	-.35

Note: Significant correlations are $> |0.40|$.

rules, communications and instructions were written and filed tended to increase with the size of the school.

The negative association between Dispersion of Authority and location ($r = -0.68$) could be explained by the locale of the school. Urban schools tended to be less centralized and tended to have greater decision making autonomy than their rural counterparts.

Standardization was positively related to location ($r = 0.41$) and charter ($r = 0.58$). Rural schools tended to utilize more standardized procedures than the urban schools. On the other hand, urban schools showed a tendency toward greater specialization in non-line functions. In rural schools the superintendent and usually the principal (but not always) made all staffing decisions. In urban schools, staff selection usually involved the principal, vice-principal, department head and a few subject area teachers. Saskatchewan secondary schools tended to score lower on this factor in comparison to the Manitoba secondary schools.

SUMMARY

Of the five continuous contextual variables only size related to all ten structural variables. Size was positively related to specialization, documents, recording of role performance, formalization and autonomy. Standardization and centralization were negatively related to size. The relationships suggested that with increasing size there was a tendency for increasing structuring of activities and decision making autonomy within the secondary schools. Age was associated with percentage superordinates. Percentage

manpower turnover was associated with documents. Principal (total experience) was associated with documents.

The variable location was positively associated with centralization, but negatively with autonomy, percentage clerks, and percentage superordinates. Charter was negatively associated with specialization and percentage superordinates. These relationships showed a tendency for urban schools to have a greater decision making discretion and to have a larger proportion of clerks and superordinates than their rural counterparts. Saskatchewan secondary schools showed this tendency to a greater extent than Manitoba secondary schools.

Size (students) was positively related to Dispersion of Authority, but negatively related to Standardization and Nonworkflow Proportion. Location was negatively associated with Dispersion of Authority, but positively with Standardization. Charter was positively associated with Nonworkflow Proportion. These relationships showed a tendency for decentralization of decision making to increase with increasing school size. Urban schools exhibited this characteristic to a greater extent than rural schools. Saskatchewan schools tended to have a larger proportion of nonworkflow personnel.

Chapter 8

RELATIONSHIPS OF STRUCTURE AND BEHAVIOR IN FORTY SECONDARY SCHOOLS

Organizational theory suggests that the behavior of organizational members is in some way related to the structural framework within which they work. This chapter reports the findings of this study concerning the relationships between structure and behavior. The interrelationships of variables of structure and variables of teacher-principal behavior are reported followed by the interrelationships of the structural factors and the behavioral variables.

RELATIONSHIPS BETWEEN STRUCTURAL VARIABLES AND BEHAVIORAL VARIABLES

The Pearson product-moment correlation coefficients between the structural variables and the behavioral variables are shown in Table 24.

The highest association was between specialization and esprit ($r = 0.65$), suggesting a tendency for morale to be the highest in schools where there was the highest degree of specialization in nonworkflow activities. Whether specialization is the cause of increased morale or a product of the type of individual within the organization, cannot be ascertained from this study. However, Litwin and Stringer (1968) reported that the motivation to do something extra and morale are closely related.

Table 24

PRODUCT-MOMENT CORRELATIONS BETWEEN STRUCTURAL VARIABLES AND BEHAVIORAL VARIABLES (N = 40)

Variable	Specialization	Documents	Recording of role performance	Formalization	Standardization	Centralization	Autonomy	Clerks	Nonworkflow	Superordinates
Disengagement	-.38	.10	.02	.09	.34	.09	-.12	-.23	.15	.19
Hindrance	-.17	-.10	.13	-.06	.29	-.07	.01	-.18	-.17	.17
Esprit	.65	.31	.25	.31	-.45	-.27	.23	.30	.16	.12
Intimacy	.23	.25	.17	.24	.04	.15	-.10	.04	.37	.01
Alloofness	-.24	-.42	-.25	-.41	.21	.32	-.33	-.34	-.18	-.36
Production Emphasis	-.37	-.31	-.26	-.31	.36	.39	-.33	-.30	-.16	-.33
Thrust	.22	-.04	-.04	-.04	-.14	-.15	.18	-.05	-.14	-.04
Consideration	.40	.02	.00	.02	-.28	-.20	.23	.04	.00	.00

Specialization was also associated with disengagement ($r = -0.38$), production emphasis ($r = -0.37$) and consideration ($r = 0.40$). As specialization in nonworkflow activities increased, there was a tendency for teacher behavior which would be detrimental to the achievement of the goals of the school (disengagement) to decrease. Additionally, teachers tended to perceive the principal's behavior as being typically less close in supervision. It could be inferred that teachers have more discretion over decisions in such situations.

Formalization was associated positively with esprit ($r = 0.31$), but negatively with aloofness ($r = -0.41$) and production emphasis ($r = -0.31$). This result was in contrast to what one might have anticipated. The finding suggested that staff morale tended to increase with a proportionate increase in the number of procedures, rules, communications and instruction that were written and filed. Under such circumstances, teachers tended to perceive the principals as being less formal, impersonal and close in their supervision of staff. In other words, teachers may prefer to work in situations where their roles and performance are adequately prescribed and recorded. A possible explanation may be that schools scoring high on the formalization scale also scored high on the autonomy scale and thereby, possibly resulting in greater teacher decision making autonomy over their activities.

A study conducted by Moeller (1962) adds a further dimension to this argument. He found (1962:155) that "bureaucratization in school system organization was associated with a greater, not

diminished, sense of power among teachers." That is, teachers may prefer to work in a climate that defines their role, but allows decision making autonomy within that framework. Corwin (1970) made a similar conclusion.

Standardization was positively associated with disengagement ($r = 0.34$) and production emphasis ($r = 0.36$), and negatively with esprit ($r = -0.45$). This finding suggested that in secondary schools where procedures become increasingly routinized, and where the principal engaged in close supervision of staff performance, morale tended to decrease. Under such circumstances teachers tended to engage in activities which were termed as being detrimental to the achievement of the goals of the organization. Corwin (1970) also reported that standardization and close supervision were positively correlated.

Centralization had a positive correlation with aloofness ($r = 0.32$) and production emphasis ($r = 0.39$). Whereas autonomy had a negative relationship with the same two principal-behavior variables ($r = -0.33$ and $r = -0.33$ respectively). As decision making became more highly centralized, teachers tended to perceive their principal's behavior as being more formal and impersonal, as well as being characterized by close supervision of their performance. Conversely, in schools where the decision making autonomy resided at the lower levels within the school itself, teachers tended to perceive their principal's behavior as being less formal and impersonal, and their performance as being less closely supervised.

A number of statistically significant relationships were

also found between the teacher-principal behavioral variables and the configuration variables. Percentage clerks was negatively associated with aloofness ($r = -0.34$) implying that schools with more clerical assistance had fewer principals who tended to be perceived as being formal and impersonal. Whether the additional clerical assistance allowed the principals more time to pursue personal and informal activities with individual staff members was not ascertained in this study.

Percentage nonworkflow correlated with intimacy ($r = 0.37$). That is, as the number of nonworkflow personnel (such as technicians, aids, custodians, resource personnel, etc.) increased, staff enjoyment of friendly social relations with each other also tended to increase.

Percentage superordinates was negatively related to aloofness ($r = -0.36$) and production emphasis ($r = -0.33$). This suggested that in schools with a small administrative hierarchy, principals tended to engage in closer supervision of teachers to ensure a high level of performance, and were perceived as being more formal and impersonal in their behavior towards staff members. Some researchers (Hall, 1972; and Blau and Schoenherr, 1972) contend that as the organization becomes more hierarchically differentiated, access to the administrative hierarchy becomes more difficult, and consequently, a feeling of "anomie" results. However, secondary schools did not reflect this type of attitude.

Two subscales of the OCDQ, hindrance and thrust, did not attain significant correlations with any structural variables, suggesting that teachers tended not to perceive themselves as being

overburdened by administrative paperwork and committee requirements. Nor do they perceive the principal motivating them through an example of hard work within the structural framework.

RELATIONSHIPS BETWEEN STRUCTURAL FACTORS AND BEHAVIORAL VARIABLES

The Pearson product-moment correlation coefficients between the structural factors and the teacher-principal behavioral variables are shown in Table 25.

Dispersion of Authority was associated with aloofness ($r = -0.39$) and production emphasis ($r = 0.41$). This result suggested that as school decision making autonomy increased, principals tended to supervise their staff performance less closely. Teachers in turn, tended to perceive their principal's behavior as being less formal and impersonal. Conversely, the higher the decision making level, the tendency was for closer supervision of staff performance. This result was similar to that reported by Corwin (1970).

Standardization was positively related to disengagement ($r = 0.40$) and production emphasis ($r = 0.39$), but negatively related to esprit ($r = -0.66$) and consideration ($r = -0.41$). The high relationship between this factor and esprit is noteworthy. It suggested that in schools where standardization of procedures was low, and where many "specialisms" occurred, there was a tendency for staff morale to be high. In such schools, the organization tended to move towards the attainment of its goals, and teachers tended to perceive their principals as allowing them the freedom to pursue such activities. Additionally, the principals' behavior tended to

Table 25

PRODUCT-MOMENT CORRELATION COEFFICIENTS BETWEEN STRUCTURAL
DIMENSIONS AND BEHAVIORAL VARIABLES (N = 40)

Variable	Dispersion of Authority	Standardization	Nonworkflow Proportion
Disengagement	-.10	.40	.14
Hindrance	.03	.21	-.12
Esprit	.29	-.64	.30
Intimacy	-.09	-.19	.35
Aloofness	-.39	.26	-.38
Production Emphasis	-.41	.39	-.30
Thrust	.10	-.22	-.10
Consideration	.17	-.41	.01

be such that they took a personal interest in their teachers.

Nonworkflow Proportion was positively related to intimacy ($r = 0.35$) and negatively to aloofness ($r = -0.38$). Both of these correlations suggested that teacher relations tended to improve with an increase in the proportion of nonworkflow personnel and the amount of formal role clarification. Under such circumstances the principal's behavior tended to be less formal and impersonal.

SUMMARY

When the ten structural variables were correlated with the eight teacher-principal behavioral variables, nineteen statistically significant correlations were obtained.

The highest correlations were between esprit and specialization (positive), and esprit and standardization (negative), suggesting that with an increase in the number of "specialisms" performed by the school and a concomitant decrease in the standardization of procedures, staff morale tended to increase.

Specialization and standardization of personnel procedures were also associated with disengagement and production emphasis.

Formalization was related to esprit, aloofness and production emphasis. This relationship suggested that as the amount of documentation increased, there was a tendency for staff morale to improve.

Centralization associated positively with aloofness and production emphasis, whereas autonomy had a negative relationship with the same two variables.

The interrelationship of the three configuration variables

and eight behavioral variables resulted in three statistically significant correlations. Percentage clerks were associated with aloofness. Percentage nonworkflow correlated with intimacy, whereas percentage superordinates was associated with aloofness and production emphasis.

Only one structural variable, recording of role performance, and two behavioral variables, hindrance and thrust, did not produce any statistically significant correlations.

Dispersion of Authority was associated with aloofness and production emphasis. Standardization had a positive association with disengagement and production emphasis, but a negative association with esprit and consideration. Nonworkflow Proportion was positively related to intimacy and negatively to aloofness.

Of the eight behavioral subscales, aloofness and production emphasis, produced the largest number of statistically significant correlations. Both subscales are measures of principal's behavior.

The extent of the significant correlations among structural and behavioral variables suggested that structure does have an influence on the behavior of organizational members.

Chapter 9

SUMMARY, CONCLUSIONS AND IMPLICATIONS

In this chapter the results of the study are summarized, some conclusions drawn, and implications for research and practice discussed.

SUMMARY

The purposes of the study were (1) to describe the organizational structures of selected secondary schools; (2) to determine the extent to which structural variables and factors were related to selected contextual and behavioral variables; and (3) to assess the applicability of the Aston methodology for studying the organizational structures of small institutions serving a similar function; specifically, secondary schools.

In order to explicate the concerns of this study, twelve sub-problems were specified. Sub-problems 1 and 2 dealt with the applicability of the scales. Sub-problems 3, 4 and 5 focused on the structural components of secondary schools and their comparability with the Aston and college measures. Sub-problems 6, 9 and 10 dealt with the contextual variables and their relationships with the structural variables and factors. Lastly, sub-problems 7, 8, 11 and 12 focused on the behavioral variables and their relationships with the structural variables and factors.

Conceptual Framework

The literature on bureaucracy and the Aston studies provided the background for this study. The theoretical position of this study was that secondary schools have identifiable structural characteristics. These structures in turn affect the behavior of the organizational members (principal and teachers). How the organizational members behave within the structure of the organization is mediated by the organizational control patterns and the expectations of other people with whom they work.

This model represented a separation of the variables of structure and of organizational behavior from other variables commonly stated to be related to them. This latter class of variables is called contextual in the sense that they can be regarded as a setting within which structure is developed. Each of these levels were interrelated to determine the extent to which relationships existed.

Organizational structure was conceptualized as consisting of patterned (regular), and relatively stable activities. Structure was perceived as being a multidimensional concept as formulated and measured by the Aston researchers.

Methodology

This study was a quantitative case study of forty secondary schools in Manitoba and Saskatchewan. These schools were selected on the basis of size (minimum 25 teachers) and a willingness to participate. Data for the structural measures were collected by means of a modified Aston Interview Schedule. Measures on the

behavioral variables were obtained by means of the Organizational Climate Description Questionnaire (OCDQ). The OCDQ was completed by the staff of each school.

Ten structural variables, nine contextual variables and eight teacher-principal behavior variables formed the dimensions examined in a multivariate analysis.

In order to ensure that the dimensional measures of organizational structure approximated a Guttman scale, each set of items was subjected to item analysis. The raw data from all the secondary schools were scored for each dimension, standardized and the standardized variables correlated and analyzed for underlying dimensions.

All contextual variables were also standardized and correlated to determine what relationships existed among them.

For the OCDQ, the item scores were combined by subtest and averaged, the subtest scores averaged for each school and the total population. The scores were standardized using a mean of fifty and a standard deviation of ten. Intercorrelation coefficients were calculated to determine what relationships existed among the behavioral variables.

Scores on the structural, contextual and behavioral variables were intercorrelated to determine what relationships existed among the sets of variables.

When the variables were continuous, the Pearson product-moment correlation coefficient was used. When continuous variables were correlated with dichotomous variables, the Brogden coefficient

was used.

Structure

The mean item analysis values ranged from 0.65 to 0.75. Four of the six scales exceeded the means achieved by the Aston studies, and the other two were of similar size. These results were comparable to those obtained in the college study.

When the means, ranges and standard deviations were calculated, relatively wide differences were found among the secondary schools on the structural variable scores. For example, documents had a mean of 13.1, a standard deviation of 5.7 and a range of 3 to 24 (maximum range was 25). These results suggested that the scales were suitable for measuring organizational structure in secondary schools.

Correlation of the structural variables indicated that a number of statistically significant relationships existed. Autonomy had strong positive associations with documents, recording of role performance and formalization, whereas centralization had negative associations with the same variables. Specialization related negatively with standardization. This latter result was not found by the Aston and college studies.

Principal component orthogonal factor analysis with varimax rotation was then performed on the structural variables. The three-factor solution appeared to be the most logical in terms of loadings of the variables. The first factor was designated Dispersion of Authority since the variables loading on this factor were concerned with the loci of decision making. The variables loading on this

factor were autonomy, centralization, percentage superordinates and percentage clerks.

The second factor was concerned with the standardization of procedures and the amount of role differentiation in the nonwork-flow activities. This factor was named after its highest loading variable and identified as Standardization. The variables loading on this factor were specialization and standardization.

The third factor described quite a different aspect of structure, that related to the configuration of the organization in terms of the nonworkflow. Consequently this factor was named Nonworkflow Proportion. Variables loading on this factor were percentage nonworkflow and formalization.

Structural factors found in this study differed considerably from those obtained in the original Aston and college studies. Aston Structuring of Activities variables loaded on Factor II and III of this study, and Factor I and II of the college study. The relationship between functional specialization and the other structural variables appeared to be different from that which occurred in the Aston study.

Aston Factor II variables (Concentration of Authority) loaded on Factor I for both the college and secondary schools studies. However, in the college study these variables were associated with formalization and standardization of personnel procedures.

Similarly, the Aston Factor III (Line Control of Workflow) variables did not appear in the college or secondary school study in the same grouping. Percentage nonworkflow had the highest loading

on Factor three for both the college and secondary school study.

Inspection of these three analyses readily revealed that the three-factor college and secondary school analyses showed a more discrete separation of variables than the original Aston analysis.

Wide variations were found in factor scores for each dimension, suggesting that secondary schools could be differentiated on the basis of their structural profiles.

Context and Organizational Behavior

Variations were found on all seven continuous contextual variables. However, only a few correlations existed among these variables. The three size measures were strongly related ($r \geq 0.95$).

Intercorrelation of the teacher-principal behavior variables resulted in the clustering of variables. The variables intimacy, esprit, thrust and consideration were all strongly related. This cluster of characteristics, however, was negatively related to the teacher behaviors of disengagement and hindrance, which were themselves closely allied. Esprit was also negatively associated with the principal behavior variables aloofness and production emphasis. Intercorrelation of the subtest scores of the OCDQ revealed a pattern of relationships consistent with the findings of previous studies using this instrument.

When the contextual and behavioral variables were intercorrelated, a number of statistically significant correlations resulted. Production emphasis was positively related to percentage manpower turnover, suggesting that close supervision tended to contribute to higher staff turnover. Principal (total experience)

was positively related to aloofness, whereas principal (experience in present school) was negatively associated with thrust. Size (students) correlated negatively with aloofness and production emphasis, suggesting that principals in larger schools tended to behave in a manner described by teachers as being less impersonal and formal and less close in their supervision of staff performance.

Location was related to aloofness and production emphasis. Rural principals tended to be more formal and impersonal in their behavior and tended to supervise their staffs more closely than urban principals.

Charter was negatively related to esprit and positively to production emphasis. Saskatchewan teachers tended to have higher morale than their Manitoba counterparts. Manitoba principals tended to supervise their staff more closely in an attempt to ensure a high level of performance.

Structure and Context

Relationships were found between the contextual variables and the structural variables. Size was associated with all of the structural variables with the exception of the three configuration variables. The results suggested that larger secondary schools tended to be more structured, but were more decentralized in their decision making process.

Location was positively associated with centralization and negatively with autonomy, suggesting that rural schools tended to have less decision making discretion and tended to be more centralized in comparison to urban schools.

Charter was negatively related to specialization and percentage superordinates, suggesting that Saskatchewan secondary schools tended to perform a greater number of nonworkflow activities and to have a larger number of superordinates than did Manitoba schools.

Similar relationships were found when the contextual variables were intercorrelated with the structural factors.

Structure and Behavior

Relationships were found between behavioral and structural variables. The highest association was between specialization and esprit, suggesting a tendency for morale to be the highest in schools where there was the highest degree of specialization in nonworkflow activities. Specialization was also associated with disengagement, production emphasis and consideration.

Formalization was associated positively with esprit, but negatively with aloofness and production emphasis. This result suggested that staff morale tended to increase as the number of procedures, rules, communications and instructions that were written and filed increased.

Standardization was positively associated with disengagement and production emphasis, and negatively with esprit. In secondary schools where procedures became increasingly routinized, and where the principal engaged in close supervision of staff performance, morale tended to decrease.

Centralization was positively associated with aloofness and production emphasis, whereas autonomy had a negative relationship with

the same two variables. As decision making became more highly centralized, teachers tended to perceive their principal's behavior as being more formal and impersonal, as well as being characterized by close supervision of their performance.

Percentage clerks was associated with aloofness. Percentage nonworkflow was related to intimacy, whereas percentage superordinates was related to aloofness and production emphasis.

Dispersion of Authority was associated negatively with aloofness and positively with production emphasis. Standardization was positively related to disengagement and production emphasis, but negatively related to esprit and consideration. Finally, Nonworkflow Proportion was positively related to intimacy and negatively to aloofness.

MAJOR CONCLUSIONS AND THEIR IMPLICATIONS

The major conclusions drawn from this study may be summarized in three areas: theoretical, methodological and practical. It must be remembered that only tentative answers can be inferred from the indices that were available.

Theoretical Conclusions and Implications for Further Research

Several observations arising from the conceptual background of this study tended to be confirmed by the findings. The theoretical position of this study, like the Blau and Schoenherr (1971) and Corwin (1970) studies, assumed that structures of formal organizations could be studied apart from the organization's personnel and implied

that structure both reflects and accounts for much of the behavior of the organizational members. The data tended to support this assumption.

Structurally, the original Aston studies (Pugh et al., 1963; 1968b; 1969a; Hickson et al., 1969) claimed that organizations were characterized by two distinct elements, Structuring of Activities and Concentration of Authority. The study reported selected only educational organizations; namely, secondary schools. Three factors of structure were found. These were Dispersion of Authority, Standardization and Nonworkflow Proportion. These factors differed substantially from the original Aston studies (Pugh et al., 1968b), Heron (1972), and Holdaway et al. (1975) college study, but were more in agreement with Riemann's (1973) study. Whereas the Aston researchers isolated two dimensions of Concentration of Authority and Structuring of Activities (Pugh et al., 1968b), and Child (1972) one dimension, three independent dimensions emerged in the present study to describe the same aspects of bureaucratic structure. One may conclude that the dimensions required to adequately describe bureaucratic structures may be dependent on a number of variables, including the dependence of an organization unit on a higher authority and the socio-cultural environment in which the organization has to function. Further, it is suggested that organizations may be able to attain their goals effectively by means of any one of a wide variety of structural arrangements. Holdaway et al. (1975:53) made the following conclusion:

It can be suggested that in any one sector of the total population of organizations, for example, industry, education

or hospitals, the organizations do have only a limited number of main structural components. While showing underlying likenesses, as the Aston studies of diverse units demonstrated, these components will differ from sector to sector, hence the multidimensional stress in the interpretation of the Aston data across sectors.

It appears that structural components will differ from sector to sector. The factor patterns obtained for secondary schools may differ from those obtained for post-secondary institutions, which may in turn differ from those obtained for industrial and business organizations. In other words, what may be required is a contingency theory of organizational structure. If the environment has the effect on structure that the theory suggests, then it seems plausible that different structural arrangements are viable alternatives depending on the environment in which the organization finds itself. A similar suggestion has been made by Lawrence and Lorsch (1969) and Derr and Gabaro (1973).

A second conclusion deals with the extent to which structure and behavior are related. As previously stated, this study assumed that structure reflects and accounts for much of the behavior of personnel. Although causality was not investigated, the data did tend to support the notion that structure does have an effect on the behavior of organizational members. Corwin (1970) using similar data arrived at the same conclusion.

This study found that secondary schools which were characterized as being high on the dimensions of specialization, formalization, autonomy, and low on centralization and standardization, tended to have the highest morale. The degree of staff disengagement increased with standardization, but decreased with specialization.

Concomitantly close supervision of staff tended to be reflected by schools who were high on centralization and standardization.

Finally, this study noted the close connection between structuring of activities and centralization and their common role in describing a framework of administrative control. The original Aston studies (Pugh et al., 1968b) contended that the structure of organizations was composed of two distinct elements, Structuring of Activities and Concentration of Authority. According to Holdaway et al. (1975), organizations could exhibit more of one and less of the other or develop both together. This view allowed organization to be more variable in form and method of control than the classic Weberian perspective is often taken to imply.

Child (1972) stated that the common connection between these two dimensions was their role in describing a framework of administrative control. Similarly, Hinings and Lee (1971:86) comment ". . . as organizations regulate more and more behavior, so they decentralize." Blau and Schoenherr (1971:121) also reached a similar conclusion. They claim that "the restraints imposed by formalized procedures encourage the development of a less centralized authority structure that permits more flexible decision making." Child (1972:174) argues that the reverse is also true, "when organizations rely less on standard procedures for regulating and recording behavior, so they tend to centralize the locus of decision making."

The results of this study with regard to structuring and centralization are similar to the conclusions made by Child (1972)

and Holdaway et al. (1975). In the schools investigated, two methods of decision making discretion were discerned: (a) maintenance of control directly by confining decisions to outside the school, or (b) maintenance of control indirectly by relying on the use of procedures, records and additional supervisory personnel within the school. In other words, administrative control in schools was maintained in one of the two modes cited.

Size was the major predictor of decentralization. The larger urban schools tended to have greater decision making discretion than their rural counterparts. This result was in agreement with the conclusion of Child (1972) namely, that larger organizations tend to be more decentralized in their decision making.

When the relationships between the behavioral variables and the autonomy variables are examined, a number of results become apparent. Schools where decision making was decentralized, had better staff morale and the principals were perceived as being less aloof and less close in their supervisory style. However, concomitant with the decentralization of decision making was an increase in the amount of documentation used. Thus, urban systems used a greater amount of documentation to define roles, yet this resulted in higher staff morale.

What is required now is a testing of hypotheses based on the results of the various studies. As well, there is a need to identify additional contextual and behavioral variables for the school situation. Investigation should also be undertaken to determine the relationship between structure and power.

Methodology and Implications for Further Research

One purpose of this study was to test the applicability of the Aston methodology to relatively small organizations serving a similar function. This section is concerned with the methodological aspects of this study and its implications.

The findings of this study indicate that the Aston methodology can be adapted to the study of organizational structures of educational organizations with as few as twenty-five paid employees. The abbreviated form of the Aston Interview Schedule, with slight modifications, has sufficient discriminating power to be used to study such organizations.

The Aston studies were based upon "objective" rather than upon "subjective" data, and consequently had certain advantages over other methodologies. Inkson et al. (1967:37) iterated a similar view by stating:

Perceptions . . . are important in shaping behavior and are clearly partly dependent on the formal situation. Measurements of this type need to be allied to more objective measures, for the key to understanding organizational behavior is the relationship between the two.

This approach produces a precision of measurement which has been lacking in methodologies relying solely upon perceptually-based data.

Furthermore, the data can be collected rather easily and quickly, and then subjected to a variety of analytical and statistical techniques. The methodology also suggests how propositions arising from axiomatic theories of organization can be tested in whole or in part.

That is not to say that the instrumentation does not have

difficulties. There was a tendency for the structural scores of secondary schools located within the same educational jurisdiction to be fairly similar. What may be required is a more inclusive population of "organizational attributes." The Aston researchers claimed that they selected the most commonly held attributes available in the literature. McKelvey (1975:514) suggests in his review that the Aston researchers conceptualized very few dimensions. For example, of the thirty-seven Weberian imperatives, they only chose seven.

Some of the concepts may have different connotations depending on the organization under investigation. For example, Holdaway et al. (1975), Kelsey (1973) and this study, found that specialization in schools differed from that found in industrial organizations. According to Kelsey (1973:259-260):

This result may be seen as confirming the point of view which led to such a sweeping adaptation of the instrument, namely, that what the Aston studies call Functional Specialization is not something which can be observed in individual schools.

The assumption made in this study, as did the Aston (Levy and Pugh, 1969), Heron (1972), Kelsey (1973), and Holdaway et al. (1975) studies, is that statistical procedures (notably scaling and item analysis) developed in the area of psychological testing theory are applicable to organizational data. Few, if any, have tested this assumption. Mansfield (1973) questions whether the Aston measures are vector or scalar quantities. Further research is required in this area.

Independence of measures is interfered with when the same

items can form the substance of more than one measure (e.g., autonomy is a derivative of centralization). McKelvey (1975) contends that each attribute must not be overrepresented in the input stream of the multivariate.

Validation of data is another problem. In this study the structural data were collected during interviews with the principal of each school. Efforts were made to validate the data in a number of ways including comparison with handbooks, policy manuals and in some cases talking to the superintendent. What is required according to McKelvey (1975) is a more inclusive population of observers. Thus all levels need to be represented in the sample. A comparative study of schools to determine whether the Aston and Hall approaches provide different views of the organization should be undertaken.

Studies should also be undertaken to ensure sufficient input in each scale. For example, if different decisions were added to the autonomy scale, would similar results be obtained.

Implications for Practice

If structure does reflect and account for much of the behavior of personnel, then it seems apparent that administrators and teachers might want to attempt to manipulate the way in which the school itself is organized. At present the almost universal administrative response to school problems is to tighten bureaucratic controls. Yet it appears that efforts to maintain close supervision of employees in some types of organizations only aggravates the situation.

There are a number of alternatives to tighter control—

altering the structural system and changing the administrative style.

First, the process of decision making in secondary schools can be appreciably altered. The data suggest that esprit and disengagement tended to increase with the decentralization of decision making. Corwin (1970:351) contends that teachers want more than merely the opportunity to become involved with some stages of decision making at the discretion of the administration. "They want final authority over certain types of decisions." This study assessed the degree of autonomy by counting the number of listed decisions which could be made at the school level. Many of these decisions could have been made at lower levels. It seems apparent that teachers want to be consulted in those areas that affect them directly.

This study also noted the need for a system of rules and regulations. Morale tended to increase with the degree of formalization. Schools should endeavor to develop a policy manual that details many of the school's activities. However, it should not infringe on those areas which teachers consider their domain. Nor should schools develop too many standardized procedures as noted by the relationship between standardization and esprit.

Second, more effort could be made to find more precise ways of combining administrative styles with appropriate organizational climate. Teachers prefer to be viewed as professionals (Corwin, 1970). The data suggest that close supervision of staff may result in lower morale and higher staff turnover. Supervision should be of the type that is seen as being helpful rather than a hindrance.

BIBLIOGRAPHY

- Adams, Raymond S., Richard M. Kimble and Marjorie Marlin
 1970 "School size, organizational structure and teaching practices." *Educational Administration Quarterly*, 6:15-31.
- Aiken, Michael and Jerald Hage
 1966 "Organizational alienation: A comparative analysis." *American Sociological Review*, 31:496-507.
 1972 "Program change and organizational properties." *American Journal of Sociology*, 72:503-519.
- Aldrich, Howard E.
 1972 "Technology and organizational structure: A reexamination of the findings of the Aston group." *Administrative Science Quarterly*, 17:26-43.
- Anderson, B. D.
 1970 *Bureaucratization and Alienation: An Empirical Study in Secondary Schools*. Unpublished Doctoral dissertation, University of Toronto, Toronto.
 1974 "An application of the bureaucratic model to the study of school administration." *The Journal of Educational Administration*, 12:63-75.
- Anderson, Donald P.
 1964 *Organizational Climate of Elementary Schools*. Research Monograph No. 1, Educational Research and Development Committee of the Twin Cities Metropolitan Area, Minneapolis.
- Anderson, Theodore and Seymour Warkov
 1961 "Organizational size and functional complexity." *American Sociological Review*, 26:23-28.
- Appleberry, James and Wayne K. Hoy
 1969 "The pupil control ideology of professional personnel in 'open' and 'closed' elementary schools." *Educational Administration Quarterly*, 5:74-85.
- Argyris, Chris
 1957a *Personality and Organization*. New York: Harper.
 1957b "The individual and the organization: Some problems of mutual adjustment." *Administrative Science Quarterly*, 2:1-4.
 1960 *Understanding Organizational Behavior*. Homewood, Illinois: Dorsey Press.

- 1964 Integrating the Individual and the Organization. New York: John Wiley.
- 1973 On Organizations of the Future. Beverley Hills: Sage.
- Bakke, E. W.
- 1950 Bonds of Organization. New York: Wiley.
- 1959 "Concept of the social organization." In M. Haire (ed.), Modern Organizational Theory: 16-75. New York: Wiley.
- 1966 Bonds of Organization. Second edition. Hamden, Connecticut: Archon Books.
- Bereday, George Z. F.
- 1964 Comparative Method in Education. New York: Holt, Rinehart and Winston.
- Berger, M.
- 1957 "Bureaucracy east and west." Administrative Science Quarterly, 11:5-519.
- Bidwell, Charles E.
- 1965 "The school as a formal organization." In James G. March (ed.), Handbook of Organizations: 972-1022. Chicago: Rand McNally.
- Bishop, Lloyd and Julius R. George
- 1973 "Organizational structure: A factor analysis of structural characteristics of public elementary and secondary schools." Educational Administration Quarterly, 9:66-80.
- Blau, Peter and W. Richard Scott
- 1962 Formal Organizations. San Francisco: Chandler.
- Blau, Peter M.
- 1956 Bureaucracy in Modern Society. New York: Random House.
- 1968 "The hierarchy of authority in organizations." American Journal of Sociology, 73:119-141.
- Blau, Peter and Richard A. Schoenherr
- 1971 The Structure of Organizations. New York: Basic Books.
- Brogden, Hubert E.
- 1949 "A new coefficient: Application to biserial correlation and to estimation of selective efficiency." Psychometrika, 14:169-182.

- Brown, R. J.
 1965 Identifying and Classifying Organizational Climates in Twin Cities Area Elementary Schools. Unpublished Doctoral dissertation, College of St. Thomas, Minneapolis.
- Campbell, John P., Marvin D. Dunnette, Edward Lawler III and Karl Weick, Jr.
 1970 Managerial Behavior, Performance and Effectiveness. New York: McGraw-Hill.
- Carpenter, H. H.
 1971 "Formal organizational structural factors and perceived job satisfaction of classroom teachers." Administrative Science Quarterly, 16:460-466.
- Carver, Fred and Thomas J. Sergiovanni (eds.)
 1969 Organization and Human Behavior: Focus on Schools. New York: McGraw-Hill.
- Carver, Fred and Thomas J. Sergiovanni
 1969 "Notes on the OCDQ." The Journal of Educational Administration, 8:41-48.
- Child, John
 1970 "More myths of management organization?" Journal of Management Studies, 7:376-390.
- 1972 "Organization structures and strategies of control: A replication of the Aston study." Administrative Science Quarterly, 17:163-177.
- 1973 "Predicting and understanding organization structure." Administrative Science Quarterly, 18:168-185.
- Coombs, Clyde H.
 1964 A Theory of Data. New York: John Wiley.
- Corwin, Ronald G.
 1970 Militant Professionalism: A Study of Conflict in High Schools. New York: Appleton-Century-Crofts.
- Crozier, Michael
 1964 The Bureaucratic Phenomenon. Chicago: The University of Chicago Press.
- Dalton, Gene W., Paul R. Lawrence and Jay W. Lorsch
 1970 Organizational Structure and Design. Homewood, Illinois: Richard D. Irwin and The Dorsey Press.
- Davis, J.
 1968 "Rules, hierarchy and organizational climate." Personnel Administration, 31:50-55.

- Derr, Brooklyn and John J. Gabarro
 1972 "An organizational contingency theory for education."
 Educational Administration Quarterly, 8:26-43.
- Downey, Kirk H., Don Hellriegel and John W. Slocum, Jr.
 1975 "Congruence between individual needs, organizational climate,
 job satisfaction and performance." Academy of Management
 Journal, 18:10-15.
- Eisenstadt, S. N.
 1959 "Bureaucracy, bureaucratization and debureaucratization."
 Administrative Science Quarterly, 4:302-320.
- Emery, F. E. and E. L. Trist
 1965 "The causal texture of organization environments." Human
 Relations, 18:21-32.
- Emma, P. J.
 1964 The Relationship Between Administrator Fusion and
 Organizational Climate of Schools. Unpublished Doctoral
 dissertation, George Peabody College for Teachers.
- Etzioni, Amitai
 1961 A Comparative Analysis of Complex Organizations. Glencoe,
 Illinois: Free Press.
 1964 Modern Organizations. Englewood Cliffs, New Jersey:
 Prentice-Hall.
- Feldvebel, Alexander M.
 1964 "Organizational climate, social class and educational
 output." Administrator's Notebook, 12:1-4.
- Gentry, H. W. and J. B. Kenney
 1965 "A comparison of the organizational climates of negroes and
 white elementary schools." Journal of Psychology, 60:171-
 179.
- George, Julius R.
 1969 Organizational Structure, Teacher Personality Characteristics
 and Their Relationships to Organizational Climate.
 Unpublished Doctoral dissertation, Claremont Graduate School.
- George, Julius R. and Lloyd K. Bishop
 1971 "Relationship of organizational structure and teacher
 personality characteristics to organizational climate."
 Administrative Science Quarterly, 16:467-475.
- Gerth, H: H. and C. Wright Mills
 1946 From Max Weber: Essays in Sociology. New York: Oxford
 University Press.

Gerth, H. H.

- 1952 "The Nazi party: Its leadership and composition." In R. K. Merton, B. Hocky and H. C. Selvin (eds.), Reader in Bureaucracy: 410-418. New York: Free Press.

Golembiewski, Robert T.

- 1966 "Personality and organizational structure: Staff models and behavioral patterns." Academy of Management Journal, 9:217-232.

Gosine, Molly

- 1970 An Empirical Study of the Relationships Among Bureaucracy, Teacher Personality Needs and Teacher Satisfaction. Unpublished Doctoral dissertation, University of Ottawa.

Gouldner, Alvin W.

- 1954 Patterns of Industrial Bureaucracy. Glencoe, Illinois: Free Press.

Grassie, McCrae and Brian W. Carss

- 1972 "School structure, leadership quality and teacher satisfaction." Educational Administration Quarterly, 9:15-26.

Griffiths, Daniel E. (ed.)

- 1969 Developing Taxonomies of Organizational Behavior in Education Administration. Chicago: Rand McNally.

Guttman, L.

- 1950 "The basis for scalogram analysis." In S. A. Stouffer, L. Guttman, E. A. Suchman, P. F. Lazarsfeld, S. A. Star and J. A. Clausen, Measurement and Prediction. Princeton: Princeton University Press.

Hage, Gerald

- 1965 "An axiomatic theory of organizations." Administrative Science Quarterly, 10:289-320.

Hage, Jerald and Michael Aiken

- 1967 "Relationships of centralization to other structural properties." Administrative Science Quarterly, 12:72-92.

- 1969 "Routine technology, social structure and organizational tools." Administrative Science Quarterly, 14:369-375.

- 1970 Social Change in Complex Organizations. New York: Random House.

Hall, Richard H.

- 1963a "The concept of bureaucracy: An empirical assessment." American Journal of Sociology, 63:32-40.

- 1963b "Intraorganizational structural variation: Application of the bureaucratic model." *Administrative Science Quarterly*, 7:295-308.
- 1966 "Bureaucracy and its correlates." *American Journal of Sociology*, 72:267-272.
- 1966 "Organizational size, complexity and formalization." *American Sociological Review*, 32:905-915.
- 1972 *Organizations: Structure and Process*. Englewood Cliffs, New Jersey: Prentice-Hall.
- Halpin, Andrew W. and Don B. Croft
 1963 *The Organizational Climate of Schools*. Midwest Administration Center: University of Chicago Press.
- Halpin, Andrew W.
 1966 *Theory and Research in Administration*. New York: Macmillan.
- Harman, Harry
 1960 *Modern Factor Analysis*. Chicago: University of Chicago Press.
- Hartley, Marvin C.
 1970 *The Relationship Between the Organizational Climate of Schools and Student Alienation*. Unpublished Doctoral dissertation, Rutgers University.
- Harvey, Ray
 1964 *School Organizational Climate and Teacher Classroom Behavior*. Unpublished Doctoral dissertation, University of Alberta.
- Heady, F.
 1959 "Bureaucratic theory and comparative administration." *Administrative Science Quarterly*, 3:509-525.
- Hellriegel, Don and John W. Slocum, Jr.
 1974 "Organizational climate: Measures, research and contingencies." *Academy of Management Journal*, 17:255-280.
- Heron, Robert Peter
 1972 *Growth Stages in the Development of College Structures*. Unpublished Doctoral dissertation, University of Alberta.
- Heron, R. P. and D. Friesen
 1973 "Growth and development of college administrative structures." *Research in Higher Education Journal*, 1:333-345.

- Heydebrand, Wolf
1967 "The study of organizations." *Social Sciences Information*, 6:59-86.
- Heydebrand, Wolf V. (ed.)
1973 *Comparative Organizations the Results of Empirical Research*. Englewood Cliffs, New Jersey: Prentice-Hall.
- Hickson, D. J.
1966 "A convergence in organization theory." *Administrative Science Quarterly*, 11:224-237.
- Hickson, D. J., D. S. Pugh and Diana C. Pheysey
1969 "Operations technology and organization structure: An empirical reappraisal." *Administrative Science Quarterly*, 14:387-397.
- Hinings, C. R., D. S. Pugh, D. J. Hickson and C. Turner
1967 "An approach to the study of bureaucracy." *Sociology*, 1:61-72.
- Hinings, C. R. and Gloria L. Lee
1971 "Dimensions of organizational structure and their context: A replication." *Sociology*, 5:83-93.
- Hinings, C. R., D. J. Hickson, J. M. Penning and R. E. Schneck
1974 "Structural conditions of intraorganizational power." *Administrative Science Quarterly*, 19:22-44.
- Holdaway, E. A.
1972 "Staffing ratios and school size." *The Canadian Administrator*, 11:21-24.
- Holdaway, Edward A., John Newberry, David J. Hickson and R. P. Heron
1975 "Dimensions of organizations in complex societies: The educational sector." *Administrative Science Quarterly*, 20:37-58.
- Hoy, Wayne K.
1972 "Some further notes on the OCDQ." *Journal of Educational Administration*, 10:10-11.
- Hughes, Larry W.
1968 "Organizational climate--another dimension to the process of innovation." *Educational Administration Quarterly*, 4: 17-28.
- Inkson, J. H. K., D. S. Pugh and R. Payne
1967 "Extending the occupational environment: The measure of organizations." *Occupational Psychology*, 41:33-47.

- Inkson, J. H. K., D. S. Pugh and D. J. Hickson
 1970a "Organization context and structure: An abbreviated replication." *Administrative Science Quarterly*, 15:311-329.
- Inkson, J. H. K., J. P. Schwitter, D. C. Pheysey and D. J. Hickson
 1970b "A comparison of organization structure and managerial roles: Ohio, U.S.A. and the Midlands, England." *Journal of Management Studies*, 7:347-363.
- Isherwood, Geoffrey and Wayne K. Hoy
 1973 "Bureaucracy, powerlessness, and teacher work values." *The Journal of Educational Administration*, 11:124-137.
- Kaplan, Abraham
 1964 *The Conduct of Inquiry*. San Francisco: Chandler.
- Katz, Daniel and Robert L. Kahn
 1966 *The Social Psychology of Organizations*. New York: Wiley.
- Kelsey, John G. T.
 1973 *Conceptualization and Instrumentation for the Comparative Study of Secondary School Structure and Operation*. Unpublished Doctoral dissertation, University of Alberta.
- 1974 "Organizational technology in schools: Conceptualization and measurement." *The Canadian Administrator*, 14:1-4.
- Kerlinger, F. N.
 1964 *Foundations of Behavior Research*. New York: Holt, Rinehart and Winston.
- Kolesar, Henry
 1967 *An Empirical Study of Client Alienation in the Bureaucratic Organization*. Unpublished Doctoral dissertation, University of Alberta.
- Lawrence, Paul and Jay J. Lorsch
 1969 *Organization and Environment*. Homewood, Illinois: Irwin.
- Levy, Philip and Derek Pugh
 1969 "Scaling and multivariate analyses in the study of organizational variables." *Technology*, 1:193-213.
- Litwin, G. and R. Stringer
 1968 *Motivation and Organizational Climate*. Cambridge, Mass.: Harvard University Press.
- Luthans, Fred
 1973 *Organizational Behavior*. Toronto: McGraw-Hill.

Lyon, Herbert and John M. Ivancevich

- 1974 "An exploratory investigation of organizational climate and job satisfaction in a hospital." *Academy of Management Journal*, 17:635-648.

MacKay, David Allister

- 1964 An Empirical Study of Bureaucratic Dimensions and Their Relation to Other Characteristics of School Organizations. Unpublished Doctoral dissertation, University of Alberta.

- 1964 "Should schools be bureaucratic?" *The Canadian Administrator*, 4:1-4.

- 1969 "Research on bureaucracy in schools: The unfolding of a strategy." *Journal of Educational Administration*, 7:37-44.

Mansfield, E. A.

- 1967 Administrative Communication and the Organizational Structure of the School. Unpublished Doctoral dissertation, University of Alberta.

Mansfield, Roger

- 1973 "Bureaucracy and centralization: An examination of organizational structure." *Administrative Science Quarterly*, 18:477-488.

March, James and Herbert A. Simon

- 1958 *Organizations*. New York: Wiley.

McFadden, E. C.

- 1966 The Non-participant Observer and Organizational Climate. Unpublished Doctoral dissertation, Stanford University.

McKague, Terrance R.

- 1968 A Study of the Relationship Between School Organizational Behavior and the Variables of Bureaucratization and Leader Attitudes. Unpublished Doctoral dissertation, University of Alberta.

McKelvey, William

- 1975 "Guidelines for the empirical classification of organizations." *Administrative Science Quarterly*, 20: 509-525.

McMillan, C. J., D. J. Hickson, C. R. Hinings, J. M. Pennings and R. Schneck

- 1970 "Structural differences of industrial organizations: A cross-national comparison." Paper presented to the Canadian Sociological Society, Winnipeg.

- McMillan, C. J., D. J. Hickson, C. R. Hinings and R. E. Schneck
1973 "The structure of work organizations across societies."
Academy of Management Journal, 16:555-569.
- McWilliams, E. F.
1967 The Organizational Climate and Certain Administrative and
Personnel Variables in Selected High Schools. Unpublished
Doctoral dissertation, Rutgers University.
- Merton, Robert K.
1949 Social Theory and Social Structure. Glencoe, Illinois:
Free Press.
- Merton, Robert K. and others (eds.)
1952 Reader in Bureaucracy. Glencoe, Illinois: Free Press.
- Meyer, Marshall W.
1968 "Two authority structures of bureaucratic organizations."
Administrative Science Quarterly, 13:211-228.

1972 Bureaucratic Structure and Authority. New York: Harper.
- Moeller, Gerald H.
1964 "Bureaucracy and teachers' sense of power." School Review,
9:137-157.
- Mohr, Lawrence B.
1971 "Organizational technology and organizational structure."
Administrative Science Quarterly, 16:444-459.
- Mouzelis, Nicos P.
1967 Organization and Bureaucracy. Chicago: Aldine.
- Murphy, Martin P.
1974 An Investigation of the Relationship Between Teacher Morale
and Organizational Climate in Selected Schools. Unpublished
Doctoral dissertation, University of Massachusetts.
- Newberry, John F.
1971 A Comparative Analysis of the Organizational Structures of
Selected Post-secondary Educational Institutions.
Unpublished Doctoral dissertation, University of Alberta.
- Norman, N. B.
1965 A Comparison of Measures of the Effects of Principals'
Behaviors in a Sample of North Carolina Elementary Schools.
Unpublished Doctoral dissertation, University of North
Carolina, Chapel Hill.
- Novotney, J. M.
1965 The Organizational Climate of Parochial Schools. Unpublished
Doctoral dissertation, University of California, Los Angeles.

- Parker, Thomas M.
 1974 The Relationship Between Organizational Climate and Job Satisfaction of Elementary Teachers. Unpublished Doctoral dissertation, University of Virginia.
- Payne, R. and D. Pheysey
 1971 "G. H. Stern's Organizational Climate Index: Reconceptualization and application to business organizations." Organizational Behavior and Human Performance, 6:77-98.
- Payne, Roy L. and Roger Mansfield
 1973 "Relationships of perceptions of organizational climate to organizational structure, context and hierarchical position." Administrative Science Quarterly, 18:515-526.
- Perrow, Charles
 1972 Complex Organizations: A Critical Essay. Glenview, Illinois: Scott, Foresman.
- Pheysey, D. C. and R. L. Payne
 1970 "The Hemphill Group Dimensions Description Questionnaire." Human Relations, 23:473-497.
- Pheysey, D. C., R. L. Payne and D. S. Pugh
 1971 "Influence of structure at organizational and group levels." Administrative Science Quarterly, 16:61-73.
- Plaxton, Robert
 1965 Relationships Between Principals' Personality and the Organizational Climate of Their Schools. Unpublished Master's thesis, University of Alberta.
- Porter, Lyman and Edward E. Lawler III
 1968 Managerial Attitudes and Performance. Homewood, Illinois: D. Irwin.
- Presthus, Robert V.
 1958 "Toward a theory of organizational behavior." Administrative Science Quarterly, 3:48-72.
 1961 "Weberian vs welfare bureaucracy in traditional society." Administrative Science Quarterly, 6:1-24.
 1962 The Organization Society. New York: Alfred A. Knopf.
- Pritchard, J. L.
 1966 Validation of Organizational Climate Description Questionnaire Against Perception of Non-faculty School Personnel. Unpublished Doctoral dissertation, Stanford University.

- Pugh, D. S., D. J. Hickson, C. R. Hinings, K. M. MacDonald, C. Turner and T. Lupton
 1963 "A conceptual scheme for organizational analysis." *Administrative Science Quarterly*, 8:289-315.
- Pugh, D. S.
 1966 "Modern organization theory: A psychological and sociological study." *Psychological Bulletin*, 66:235-251.
- Pugh, D. S. and D. J. Hickson
 1968a "A comparative study of organizations." In D. Pym (ed.), *Industrial Society: Social Sciences in Management*. Harmondsworth: Penguin.
- Pugh, D. S., D. J. Hickson, C. R. Hinings and C. Turner
 1968b "Dimensions of organizational structure." *Administrative Science Quarterly*, 13:65-105.
- Pugh, D. S., D. J. Hickson, C. R. Hinings and C. Turner
 1969a "The context of organization structures." *Administrative Science Quarterly*, 14:91-114.
- 1969b "An empirical taxonomy of structures of work organizations." *Administrative Science Quarterly*, 14:115-126.
- Pugh, D. S. and D. J. Hickson
 1972 "Causal inference and the Aston studies." *Administrative Science Quarterly*, 17:273-275.
- Punch, Keith F.
 1967 *Bureaucratic Structure in Schools and its Relationship to Leader Behavior: An Empirical Study*. Unpublished Doctoral dissertation, University of Toronto, Toronto.
- 1969 "Bureaucratic structure in schools: Towards redefinition and measurement." *Educational Administration Quarterly*, 5:43-57.
- Ranyard, R. W.
 1967 *The Organizational Climate and Organizational Structure of Elementary Schools*. Unpublished Doctoral dissertation, Claremont Graduate School.
- Reimann, Bernard C.
 1973 "On the dimensions of bureaucratic structure: An empirical reappraisal." *Administrative Science Quarterly*, 18: 462-476.
- Resurreccion, J. R.
 1967 *Identifying and Classifying Organizational Climates of Elementary Schools in Manila*. Unpublished Doctoral dissertation, University of Utah.

- Robbins, Melvyn and Jean R. Miller
1969 "The concept of school structure: An inquiry into its validity." Educational Administration Quarterly, 5:37-49.
- Robinson, Norman
1966 A Study of the Professional Role Orientation of Teachers and Principals and Their Relations to Other Characteristics of School Organizations. Unpublished Doctoral dissertation, University of Alberta.
- Roseveare, C. G.
1965 The Validity of Selected Subtests of the Organizational Climate Description Questionnaire. Unpublished Doctoral dissertation, University of Arizona.
- Sachs, G. A.
1964 Measurement and Evaluation in Education, Psychology and Guidance. New York: Holt, Rinehart and Winston.
- Samuel, Y. and B. F. Mannheim
1970 "A multi-dimensional approach toward a typology of bureaucracy." Administrative Science Quarterly, 15:216-228.
- Sarason, Seymour B.
1971 The Culture of the School and the Problem of Change. Boston: Allyn and Bacon.
- Sharma, C. L.
1955 "Who should make what decisions?" Administrator's Notebook, 3:1-4.
- Silverman, David
1970 The Theory of Organizations. London: Heinemann.
- Smith, David Coles
1966 Relationship Between External Variables and the OCDQ. Unpublished Doctoral dissertation, Northwestern University.
- Smith, P. T.
1968 A Study of the Relationship Between Structure and Climate in Junior College Organizations. Unpublished Doctoral dissertation, University of Texas, Austin.
- Stanbury, R. D.
1968 A Validation Study of the Organizational Climate Description Questionnaire for Iowa Elementary Schools. Unpublished Doctoral dissertation, University of Iowa.
- Stimson, J. and T. Labelle
1971 "The organizational climate of Paraguayan elementary schools: rural-urban differentiation." Education and Urban Society, 3:333-349.

- Tauber, I.
 1968 A Yardstick of Hospital Organization. Unpublished Diploma of Nursing Administration Thesis, University of Aston, Birmingham.
- Thomas, A. Ross and R. C. Slater
 1972 "The OCDQ: A four factor solution for Australian schools?" The Journal of Educational Administration, 10:197-208.
- Thompson, James D.
 1967 Organizations in Action. New York: McGraw-Hill.
- Thompson, James D. and Fredrich L. Bates
 1957 "Technology, organization and administration." Administrative Science Quarterly, 2:235-242.
- Triandis, Harry C.
 1966 "Notes on the design of organizations." In J. D. Thompson (ed.), Approach to Organizational Design. Pittsburgh: University of Pittsburgh Press.
- Tyler, William B.
 1970 Teaching Specialization as a Structural Property of Alberta School Systems. Unpublished Master's thesis, University of Alberta.
- Udy, Stanley H., Jr.
 1959 "Bureaucracy and Rationality in Weber's organizational theory: An empirical study." American Sociological Review, 24:193-200.
 1965 "The comparative analysis of organizations." In James G. March (ed.), Handbook of Organizations: 678-709. Chicago: Rand McNally.
- Vanderlain, A. S.
 1968 A Validation of the Factor II Esprit of the Organizational Climate Description Questionnaire. Unpublished Doctoral dissertation, University of Maryland.
- Watkins, J. Foster
 1968 "The OCDQ—an application and some implications." Educational Administration Quarterly, 4:46-59.
- Weber, Max
 1947 The Theory of Social and Economic Organization. (Trans. A. M. Henderson and T. Parsons) New York: Free Press.
 1952 "The essentials of bureaucratic organization: An ideal-type construction." In R. K. Merton, A. P. Gray, B. Hockey and H. C. Selvin (eds.), Reader in Bureaucracy. New York: Free Press.

Weiser, Harold E., Jr.

- 1974 A Study of the Relationship Between Organizational Climate and Teacher Morale. Unpublished Doctoral dissertation, University of New Orleans.

Woodward, Joan

- 1958 Management and Technology. Problems of Progress in Industry Series No. 3. London: Her Majesty's Stationary Office.
- 1965 Industrial Organization: Theory and Practice. London: Oxford University Press.

Department of Educational Administration

University of Alberta

Interview Schedule*

of

Selected Organization-Level Information

NAME OF SCHOOL

ADDRESS

PHONE NUMBER

PARENT AUTHORITY

INTERVIEWEE

POSITION

DATE

*Adapted from the Interview Schedule developed at the
Industrial Administration Unit, University of Aston
in Birmingham, England.

I. FUNCTIONAL SPECIALIZATION

I shall mention a number of activities which may or may not be performed in the school.
For each activity, please tell me:

- a. Whether it is performed in the school.
- b. Whether it has been specifically and exclusively delegated to one person or group
- c. Who that person or group is. (may be a person, office or group)
- d. Whether the person or group delegated performs that activity full-time (i.e., performs no other activity in the school)

Activity	Per- formed	Delegated:		Code	Items Retained*
		Yes/No	To Whom		
Activity #1 (Develop, legitimize and symbolize the organization's charter)	<input type="checkbox"/>	<input type="checkbox"/>	1	
i. Developing, form-raising functions, arranging activities, etc.	<input type="checkbox"/>	<input type="checkbox"/>	2	
2. Producing a school newspaper.	<input type="checkbox"/>	<input type="checkbox"/>	3	*
3. Employing a school advisory committee.	<input type="checkbox"/>	<input type="checkbox"/>	4	*
4. Utilizing volunteer services.	<input type="checkbox"/>	<input type="checkbox"/>	5	*
5. Holding open house, career days, etc.	<input type="checkbox"/>	<input type="checkbox"/>	6	
6. Offering courses, workshops, seminars, etc., after school hours.	<input type="checkbox"/>	<input type="checkbox"/>		

	Per- formed	Delegated:		Code	Items Retained*
		Yes/No	To Whom		
7. Producing a school newsletter.	<input type="checkbox"/>	<input type="checkbox"/>	7	
8. Arranging course or program advisory committees.	<input type="checkbox"/>	<input type="checkbox"/>	8	*
Activity #2. (Dispose of, distribute and service off campus)					
9. Co-ordinating the presentation of career advice to students.	<input type="checkbox"/>	<input type="checkbox"/>	9	*
10. Conducting follow-up studies of graduates.	<input type="checkbox"/>	<input type="checkbox"/>	10	*
11. Liaison with employers or institutes of further education.	<input type="checkbox"/>	<input type="checkbox"/>	11	*
12. Acting as a clearing-house for job placement.	<input type="checkbox"/>	<input type="checkbox"/>	12	*
Activity #3. (Carrying outputs and resources from place to place)					
13. Co-ordinating transportation for field trips, activities, and other off-campus trips.	<input type="checkbox"/>	<input type="checkbox"/>	13	
Activity #4. (Acquiring and allocating human resources)					
14. Hiring, training staff.	<input type="checkbox"/>	<input type="checkbox"/>	14	*
15. Hiring non-teaching staff.	<input type="checkbox"/>	<input type="checkbox"/>	15	
16. Allocating staff to broad areas of work.	<input type="checkbox"/>	<input type="checkbox"/>	16	*

Activity #.	(Developing and transferring human resources)	Per- formed	Delegated:		Code	Items Retained
			Yes/No	To Whom		
17.	Co-ordination of in-service training or staff development services (other than staff meetings and departmental meetings)	<input type="checkbox"/>	<input type="checkbox"/>		17	*
18.	Co-ordination of staff welfare, social or sports activities.	<input type="checkbox"/>	<input type="checkbox"/>		18	*
19.	Operating canteen or cafeteria services.	<input type="checkbox"/>	<input type="checkbox"/>		19	*
20.	Buying materials and equipment.	<input type="checkbox"/>	<input type="checkbox"/>		20	*
21.	School control	<input type="checkbox"/>	<input type="checkbox"/>		21	
22.	Maintaining and erecting buildings and equipment	<input type="checkbox"/>	<input type="checkbox"/>		22	*
23.	Maintenance of general school building and equipment.	<input type="checkbox"/>	<input type="checkbox"/>		23	*
24.	Performing business or accounting functions.	<input type="checkbox"/>	<input type="checkbox"/>		24	*

	Per- formed	Delegated:		Code	Items Retained
		Yes/No	To Whom		
Activity #10. (Controlling the workflow)	<input type="checkbox"/>	<input type="checkbox"/>	25	*
25. Time-tabling and curriculum coordination.	<input type="checkbox"/>	<input type="checkbox"/>	25	*
26. Co-ordinating overall timetabling procedures.	<input type="checkbox"/>	<input type="checkbox"/>	26	*
27. Co-ordinating curriculum content processes.	<input type="checkbox"/>	<input type="checkbox"/>	27	*
Activity #11. (Controlling the quality of materials, equipment and outputs)					
28. Coordinating student advancement from grade to grade or from level to level.	<input type="checkbox"/>	<input type="checkbox"/>	28	
29. Coordinating curriculum content.	<input type="checkbox"/>	<input type="checkbox"/>	29	
30. Making arrangements for seating and space allocation for examinations.	<input type="checkbox"/>	<input type="checkbox"/>	30	
31. Coordinating student teachers (and assistants, tutors, even etc., etc.)	<input type="checkbox"/>	<input type="checkbox"/>	31	*
Activity #12. (Assessing and devising ways of providing the quality)					
32. Devising or assessing new ways of timetabling existing courses or programs.	<input type="checkbox"/>	<input type="checkbox"/>	32	*
33. Specialized activities to evaluate courses, examination methods, etc	<input type="checkbox"/>	<input type="checkbox"/>	33	*
Activity #13. (Devising new outputs, equipment and processes)					

	Per- formed	Delegated:		Code	Items Retained
		Yes/No	To Whom		
34. Planning new teaching programs or courses.	<input type="checkbox"/>	<input type="checkbox"/>	34	
35. Devising new teaching methodologies, groups, etc.	<input type="checkbox"/>	<input type="checkbox"/>	35	*
Activity #14. (Developing and operating new activities for students)					
36. Operating record keeping or filing systems for school records.	<input type="checkbox"/>	<input type="checkbox"/>	36	
Activity #15. (Acquiring information on the operation of the school)					
37. Conducting surveys to assess the needs of employers, the community, and institutions of higher learning.	<input type="checkbox"/>	<input type="checkbox"/>	37	*
Activity #16. (Obtaining approval and insurance requirements)					
38. Handling legal or insurance affairs.	<input type="checkbox"/>	<input type="checkbox"/>	38	

17. FORMALIZATION

Documents

In this section I would like to ask about some documents which may or may not be used in the school. If possible, I would like to borrow copies of any which may be available.

Item No. for
scoring purposes
Retained

1. Does the school have any general information booklets or manuals (eg., policy manuals, rules and procedures booklet, prospectuses, calendars, etc.)?

Name of Document? Do they apply to this school only? Or to all schools in the district? To whom are they distributed?

Name of Document School only School wide Distribution to:

.....	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>

1. No. of system documents

2. Distribution of system documents

3. No. of School documents

9. Distribution of school documents

3. System chart and distribution

2. Does the school have an organization chart?

If so, is it distributed to principal only

to principal plus assistant principal

to above plus department heads/ coordinators

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Items
Retained

Item No. for
scoring purposes

☐

all staff

☐

all staff and students

*

10. School chart

and
distribution

2. Are written terms of reference, job descriptions or operating instructions provided for any of the staff categories below? If so, are they applicable to this system only or to all schools in the school system?

School only System wide

Principal

☐

Assistant principal(s), heads of departments

☐

Business manager or equivalent

☐

Non-teaching staff

☐

Non-teaching staff (e.g., counselors, librarians, etc.)

☐

Secretarial staff/teacher aides

☐

Drivers/couriering staff

☐

Transportation staff

☐

4. No. of
attempts for
when system
documented

*

11. No. of
attempts for
whom school
documented

*

	Item No. for scoring purposes	Items Retained
4. Is there a <u>procedures or regulations manual</u> ?		
For this school only		
For all schools in the system		
5. Is there a <u>policy manual</u> ?		
This school only		
For all schools in the system		
Yes		
No		
6. Is there a written Activities Calendar for the school year?		
This school only		
For all schools in the system		
Yes		
No		
7. Does the school have any of the following?		
Written school rules		
Written minutes of staff meetings		
Written reports from standing committees		
5. <u>System manual</u>	5.	*
12. <u>School manual</u>	12.	*
6. <u>System policies</u>	6.	*
13. <u>School policies</u>	13.	*
7. <u>System calendar</u>	7.	*
14. <u>School calendar</u>	14.	*
15. <u>System rules</u>	15.	*
16. <u>School rules</u>	16.	*
17. <u>System reports</u>	17.	*

A written program for in-school research

☐

Written agenda for staff meetings

☐

Regular written administrative bulletins

☐

Recording of Role Performance

1. Are records maintained to enable properly evaluation?

☐☐

Yes

No

2. Are there forms for recording evaluation?

☐☐

Yes

No

3. Do teachers take daily class attendance?

☐☐

Yes

No

4. Do teachers take home room attendance?

☐☐

Yes

No

5. Are there petty cash vouchers?

☐☐

Yes

No

6. Is there a sickness (absence) record?

☐☐

Yes

No

7. Record of instructor's performance (evaluation report)?

☐☐

Yes

No

Item No. for
scoring purposes

18

19

20

Items
Retained

*

*

*

*

*

*

*

7

Item No. for scoring purposes	Items Noted
8	
9	
10	
1	
2	

8. Record of Maintenance work done?

Yes ☐ No ☐

9. Record of courses given by instructors?

Yes ☐ No ☐

10. Preview of courses?

Yes ☐ No ☐

STANDARDIZATION

In this section of the interview I am concerned with the standardization of procedures for teaching, instruction and operation utilized by your school. I would like to borrow copies of any reports, forms, memos, etc., which may be available.

1. Staff establishment are set by enrollment? YES NO

2. What are your recruitment procedures?

No standard procedures 0

Procedures for some positions 1

Procedures for all positions 2

Also

No

5

0

Aston No.	Retained Items	Item No. for scoring purposes
3. How are staff selected? Who interviews?	4	3
by faculty committee	0	
by mixed committee (teachers and admin.)	1	
by administration	2	
by superintendent	3	
by school board	4	
4. How are principals selected? Who interviews?	5	4
by selection board (teachers, board and Adm.)	0	
by superintendent/board	1	
by superintendent	2	
5. Do you have a centralized interviewing procedure?	12	5
Not centralized	0	
Centralized	1	
6. Do you have a centralized recruitment procedure?	13	6
Not centralized	0	
Centralized	1	

Aston No.	Item No. for scoring purposes	Plans Retained
26		
7. Do staff members attend appropriate conferences?		
None	0	
Irregular	1	
Regular	2	
8. Are there standard dismissal procedures	8	
YES	49	
NO		
9. Materials and equipment ordering procedures are	9	
Ad hoc	0	
By production plan (enrollment)	1	
Stock on hand	2	
Administrative approval	3	
10. Have you a procedure for notifying purchases to Division Office?	10	
No procedure exists	0	
There is a procedure	1	
11. What is the intensity of inspection of teacher performance?	11	
None	0	
As required for tenure	1	

Action No.	Item No. for scoring purposes	Items retained
15. Do teachers submit progress reports?		
No progress reports required	0	
Irregular progress reports required	1	
Progress reports required	2	
16. Student evaluation is a result of		
Personal evaluation by the instructor	0	
Student course evaluation by the instructor	1	
Submission of grades to chairman/committee	2	
Submission of grades to administration	3	
17. Tasks of instructors are defined by		
Intuition and experience of instructor	0	
Instructions by chairman	1	
Orientation by administration	2	
Written instructions specifying tasks	3	
All of the above	4	
59		*
64	16	*
67	17	*

Aston No.	Item No. for scoring purposes	Items Retained
71	18	*
18. Obtaining ideas - Conference attending:		
There is no standard procedure to enable members of the organization's staff to attend conferences relevant to their work		
	0	
There is a standard procedure to enable staff to attend		
	1	
72	19	*
19. Obtaining ideas - Conference reporting:		
No standard procedure exists for staff to report back on conferences they have attended		
	0	
There is a reporting-back procedure		
	1	

19. ORGANIZATION (AUTHORITY)

In this section of the interview I am concerned with the levels at which formal decision-making authority rests.

Who has the authority to decide? Authority means that action can be taken on the decision even though the decision may be subject to routine ratification at a later time. Others may ratify the decision, but its intentions will not be altered.

A list of decisions will be presented, please tell me, for each decision, who decides. Please answer in terms of the following categories:

Item No. for
setting
purposes

Items
Retained

- C. TEACHER
- 1. DEPARTMENT HEAD OR ASSISTANT PRINCIPAL
- 2. PRINCIPAL
- 3. SUPERINTENDENT
- 4. SCHOOL BOARD
- 5. DEPARTMENT OF EDUCATION

Who decides:

- 1. The number of teachers in the school *
- 2. The number of department heads in the school *
- 3. The appointment of a department head *
- 4. The appointment of a teacher *
- 5. The amount of allowance for department heads *
- 6. To spend unbudgeted or unallocated funds *
- 7. The type or brand of new equipment *
- 8. The introduction of a new course or subject *
- 9. The introduction of a new program *
- 10. Which employment or further education opportunities shall be presented to the students 10 *
- 11. What shall be carried (i.e., to what the existing system, if any, shall be applied) *

Item No. for scoring purposes	Items Retained
12	
13	
14	*
15	*
16	*
17	*
18	*
19	*
20	
21	*
22	*

12. What aspects of the school's operation shall be evaluated
13. The promotion of students
14. To dismiss or demote a department head
15. To dismiss a teacher
16. Lay down buying procedures
17. Decide which supplier or materials will be used
18. Responsibilities/and or area of work of teachers staff
19. List of committees
20. What and how many staff welfare facilities are provided
21. Create a new department (functional specialist or line)
22. To create a new job

V. CONFIGURATION

1. Capital equipment :

2. Number of teachers (instructional)

Full time :
Part time :

3. Number of other professional staff (librarians, counselors, etc.)

Full time :
Part time :

4. Number of noninstructional administrative staff (principal, vice-principal, department heads, etc.)

Full time :
Part time :

5. Number of professional staff

Full time :
Part time :

6. Number of clerical staff:

Full time :
Part time :

7. Number of caretaking staff:

Full time :
Part time :

8. Other employees (e.g., Av technician, cooks, etc.)
(Specify categories)

Full time :
Part time :
9. Total employees (Full-time equivalents)

VI. CONTEXTUAL DATA

Name

How long has this school been in operation?

Location

Does this school serve an urban or rural area?

What are

What province is the school located?

What programs does the school offer? What are the current enrolments in the programs?

- 1.
- 2.
- 3.
- 4.
- 5.

Tenure of Office

How long have you been principal?

Of this school?

Your age?

Number of Teachers

1. What was the staff turnover last year?

If abnormal, what is the normal turnover?

_____ %

_____ %

SCORING FORM

Specialization

- Sum the number of activities performed (i).
- Sum the number of activities delegated (a).
- Determine the number of different delegates (b).

$$\text{Score} = b^2 / ai \times 100$$

Formalization

- Sum all scores on Documentation and Recording of Role Performance.

Documentation

- For item 1, Score = number of booklets.
- For items 2, 3, 4, 5, 6, 7, Score Yes = 1, No = 0, for school items only.
- Sum scores of all items.

Recording of Role Performance

- For items, Score Yes = 1, No = 0.
- Sum scores of all items.

Standardization

- For items 1, 5, 6, 8, 10, 18, 19, Score Yes = 1, No = 0.
- For items 2, 3, 4, 7, 9, 11, 12, 13, 14, 15, 16, 17, Score 0, or 1, or 2, or 3, or 4 depending on response.

Centralization

- Scale each item on a six point scale.
- 0 = teacher, 1 = Department Head, 2 = Principal, 3 = Superintendent, 4 = Board, 5 = Department of Education.
- Sum scores of all items.

To the Teacher:

On the following pages is a questionnaire which is part of a study dealing with large high schools in Saskatchewan and Manitoba. The purpose of the study is to investigate the relationships between certain characteristics of teachers and principals and some organizational features of the school.

The following questionnaire describes behaviors or conditions which have been found typical of many schools. Some of the items may not seem very significant to you, but all are important in describing the characteristics to be examined. You are asked to indicate to what extent each of these items characterizes your school.

Please be frank in your answers, with the assurance that individual responses are strictly confidential. Each questionnaire will be given a code number and all responses transferred to IBM cards so that complete anonymity in the analysis of data and the reporting of findings is assured.

This study has been approved by the superintendent of your school division or system. The results of the study will be used as part of a graduate thesis in educational administration.

When you have completed the questionnaire, place it in the envelope provided, seal the envelope, and hand it to the designated receiver.

Your cooperation is gratefully acknowledged.

L. E. Sackney

ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE

DIRECTIONS:

- a. READ each item carefully.
- b. THINK about how well the statement describes your school.
- c. DECIDE whether the behavior or condition described in the item occurs rarely, sometimes, often, or very frequently in your school.
- d. DRAW A CIRCLE around one of the four letters following the item to show the answer you have selected.

A = Very frequently occurs

B = Often occurs

C = Sometimes occurs

D = Rarely occurs

Please respond to EVERY item.

- | | | | | |
|---|---|---|---|---|
| 1. Teachers' closest friends are other staff members at this school. | A | B | C | D |
| 2. The mannerisms of teachers at this school are annoying. | A | B | C | D |
| 3. Teachers spend time after school with students who have individual problems. | A | B | C | D |
| 4. Instructions for the operation of teaching aids are available. | A | B | C | D |
| 5. Teachers invite other staff members to visit them at home. | A | B | C | D |
| 6. There is a minority of teachers who always oppose the majority. | A | B | C | D |
| 7. Extra books are available for classroom use. | A | B | C | D |
| 8. Sufficient time is given to prepare administrative reports. | A | B | C | D |
| 9. Teachers know the family background of other staff members. | A | B | C | D |
| 10. Teachers exert group pressure on non-conforming staff members. | A | B | C | D |

		Very frequently occurs	Often occurs	Sometimes occurs	Rarely occurs
11.	In staff meetings, there is the feeling of "let's get things done."	A	B	C	D
12.	Administrative paper work is burdensome at this school.	A	B	C	D
13.	Teachers talk about their personal life to other staff members.	A	B	C	D
14.	Teachers seek special favors from the principal.	A	B	C	D
15.	School supplies are readily available for use in classwork.	A	B	C	D
16.	Student progress reports require too much work.	A	B	C	D
17.	Teachers have fun socializing together during school time.	A	B	C	D
18.	Teachers interrupt other staff members who are talking in staff meetings.	A	B	C	D
19.	Most of the teachers here accept the faults of their colleagues.	A	B	C	D
20.	Teachers have too many committee requirements.	A	B	C	D
21.	There is considerable laughter when teachers gather informally.	A	B	C	D
22.	Teachers ask nonsensical questions in staff meetings.	A	B	C	D
23.	Custodial service is available when needed.	A	B	C	D
24.	Routine duties interfere with the job of teaching.	A	B	C	D
25.	Teachers prepare administrative reports by themselves.	A	B	C	D
26.	Teachers ramble when they talk in staff meetings.	A	B	C	D

		Very frequently occurs	Often occurs	Sometimes occurs	Rarely occurs
21.	Teachers at this school show much school spirit.	A	B	C	D
28.	The principal goes out of his way to help teachers.	A	B	C	D
29.	The principal helps teachers solve personal problems.	A	B	C	D
30.	Teachers at this school keep to themselves.	A	B	C	D
31.	The teachers accomplish their work with great vim, vigor and pleasure.	A	B	C	D
32.	The principal sets an example by working hard himself.	A	B	C	D
33.	The principal does personal favors for teachers.	A	B	C	D
34.	Teachers prefer to eat their lunch alone.	A	B	C	D
35.	The morale of the teachers is high.	A	B	C	D
36.	The principal uses constructive criticism.	A	B	C	D
37.	The principal stays after school to help teachers with their work.	A	B	C	D
38.	Teachers socialize together in small select groups.	A	B	C	D
39.	The principal makes all class-scheduling decisions.	A	B	C	D
40.	Teachers are contacted by the principal each day.	A	B	C	D
41.	The principal is well prepared when he speaks at school functions.	A	B	C	D
42.	The principal helps staff members settle minor differences.	A	B	C	D
43.	The principal schedules the workload for teachers.	A	B	C	D
44.	Teachers leave the grounds during the school day.	A	B	C	D
45.	Teachers help select which courses will be taught.	A	B	C	D

		Very frequently occurs	Often occurs	Sometimes occurs	Rarely occurs
46.	The principal corrects teachers' mistakes.	A	B	C	D
47.	The principal talks a great deal.	A	B	C	D
48.	The principal explains his reasons for criticism to teachers.	A	B	C	D
49.	The principal attempts to get better working conditions for teachers.	A	B	C	D
50.	Extra duty for teachers is posted conspicuously.	A	B	C	D
51.	The rules set by the principal are never questioned.	A	B	C	D
52.	The principal looks out for the personal welfare of teachers.	A	B	C	D
53.	School secretarial service is available for teachers' use.	A	B	C	D
54.	The principal runs the staff meeting in a business-like manner.	A	B	C	D
55.	The principal is in the building before teachers arrive.	A	B	C	D
56.	Teachers work together preparing administrative reports.	A	B	C	D
57.	Staff meetings are organized according to a 'tight' agenda.	A	B	C	D
58.	Staff meetings are mainly principal-report meetings.	A	B	C	D
59.	The principal tells teachers of new ideas he has run across.	A	B	C	D
60.	Teachers talk about leaving this school at the end of the school year.	A	B	C	D
61.	The principal checks the subject-matter ability of	A	B	C	D

	Very frequently occurs	Often occurs	Sometimes occurs	Very rarely occurs
62. The principal is easy to understand.	A	B	C	D
63. Teachers are informed of the results of a supervisor's visit.	A	B	C	D
64. The principal insures that teachers work to their full capacity.	A	B	C	D

ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE

SCORING KEY

Subtests

Disengagement	2, 6, 10, 18, 22, 26, 30, 60, 38
Hindrance	24, 20, 16, 12, -8, -4
Esprit	35, 31, 27, 23, 19, 15, 21, 11, 7, 3
Intimacy	1, 5, 9, 13, 17, 21, 25
Aloofness	57, 58, 54, 44, 34, 51, 40, -53, -63
Production Emphasis	39, 43, 61, 46, 64, 50, 47
Thrust	28, 32, 36, 41, 48, 52, 55, 59, 62
Consideration	29, 33, 37, 42, 45, 49

Notes:

1. The first item in each subtest is the key or "tracer" item.
2. For all items except #8, 4, 25, 53, 63, the scoring of the responses is as follows:

A = 4
B = 3
C = 2
D = 1
3. For the items bearing a minus sign, the scoring is reversed.

Table 26

RAW SCORES OF SCHOOLS ON STRUCTURAL VARIABLES

School I.D.	Specialization	Documents	Recording of Role Performanc.	Formalization	Standardization	Centralization	Autonomy	% Clerks	% Nonworkflow	% Superordinates
1	53.3	12	7	19	12	37	7	5.9	19.6	3.6
2	61.2	24	7	31	7	23	14	10.2	20.5	8.1
3	40.0	8	4	12	13	41	7	2.7	17.3	5.3
4	35.9	11	5	16	18	41	8	3.2	16.1	5.3
5	55.6	17	7	24	6	31	11	7.3	21.9	6.3
6	32.1	19	8	27	11	38	11	5.7	17.9	3.2
7	44.6	17	7	24	9	33	9	6.9	15.5	5.7
8	49.1	3	4	7	7	33	9	6.5	14.5	6.1
9	54.0	19	7	26	8	35	10	9.8	24.4	7.0
10	82.6	23	8	31	6	38	8	3.0	29.1	5.4
11	41.6	12	6	18	13	37	8	3.0	12.1	6.1
12	79.3	8	6	14	8	46	3	4.3	25.8	4.3
13	55.5	7	4	11	9	46	5	4.3	21.5	3.8
14	66.7	22	7	29	11	37	8	4.0	16.8	7.6
15	46.8	14	6	20	12	30	11	5.9	17.6	8.2
16	40.0	5	3	8	10	42	5	3.6	14.3	5.6
17	51.3	14	7	21	11	34	8	4.3	20.3	5.7
18	51.4	9	7	16	12	38	8	4.1	24.9	7.7
19	26.7	18	6	24	18	38	7	4.1	26.0	8.2
20	57.1	4	5	9	9	41	8	3.1	16.0	3.8
21	44.4	5	3	8	12	36	11	5.1	11.9	8.3
22	53.4	16	6	22	7	33	9	6.5	14.0	7.4
23	41.6	16	8	24	13	32	10	8.2	16.4	8.2
24	56.6	17	7	24	15	27	11	9.4	17.2	8.1
25	61.3	13	5	18	8	35	8	3.9	19.0	6.3
26	35.6	19	5	24	11	42	5	9.6	32.7	4.8
27	41.6	16	7	23	8	32	10	2.3	26.6	8.1
28	57.6	15	6	21	10	33	10	5.3	20.6	6.4
29	56.6	12	6	18	11	36	8	5.6	16.0	6.7
30	46.7	8	4	12	14	39	7	6.0	22.4	6.8
31	50.0	6	5	11	12	41	8	2.9	15.9	4.3
32	51.4	13	6	19	15	42	8	5.1	15.3	4.1
33	64.9	18	7	25	8	34	10	6.7	21.3	7.0
34	66.7	17	7	24	12	32	11	9.1	20.5	8.3
35	59.5	14	6	20	10	34	11	8.6	17.1	9.4
36	58.3	21	8	29	10	34	11	9.0	19.8	7.2
37	55.5	9	3	12	12	42	7	7.9	19.7	7.2
38	60.0	11	5	16	11	34	9	4.8	21.4	8.1
39	50.8	5	7	12	8	27	11	6.8	20.3	5.1
40	53.8	6	6	12	10	34	9	6.1	19.2	4.4

Table 27

RAW SCORES ON CONTEXTUAL VARIABLES FOR THE SAMPLE

School I.D.	Size (students)	Size (staff)	Size (employees)	Age	% Manpower Turn.	Principal (total experience)	Principal (school experience)	Location	Number
1	682	41	51	3	12.2	3	1	2	2
2	1150	64	80.5	4	3.1	10	5	2	2
3	525	31	37.5	20	9.7	10	2	1	2
4	454	26	31	10	10.0	2	2	2	2
5	1349	73	96	4	6.8	4	4	1	2
6	650	43	53	3	9.3	2	2	2	2
7	773	49	58	10	2.0	18	7	1	2
8	1060	54	62	12	14.5	18	9	1	2
9	930	46.5	61.5	15	6.4	1	1	1	2
10	744	39	55	5	5.1	3	3	1	1
11	450	29	33	15	17.9	18	10	2	2
12	640	46.5	46.5	6	14.5	2	2	2	1
13	623	36.5	46.5	70	2.8	10	5	2	2
14	850	42	50.5	16	19.0	1	1	1	1
15	520	28	34	66	18.0	7	2	1	1
16	380	14	28	11	0.	4	4	2	2
17	360	55	69	45	7.3	4	4	1	1
18	1145	54.4	72.4	8	1.9	3	3	1	1
19	580	27	36.5	9	25.0	5	5	2	2
20	580	27.5	32.7	13	4.0	15	1	2	2
21	400	26	29.5	17	7.7	1	1	1	2
22	820	40	46.5	21	5.0	4	4	1	2
23	881	46	55	12	13.0	12	12	1	2
24	1250	53	64	9	15.1	3	3	1	1
25	1700	63	102.5	12	15.7	1	1	1	1
26	570	25	52	8	30.0	12	6	2	2
27	1362	63.5	86.5	11	15.2	10	3	1	1
28	1506	75	95.5	13	8.0	8	8	1	1
29	1080	52.5	62.5	11	1.9	13	13	1	1
30	470	26	33.3	23	7.7	5	5	1	1
31	600	29	34.5	10	0	10	10	1	1
32	725	41.5	49	3	18.8	3	3	2	2
33	1590	72.2	89.3	12	9.8	12	12	1	1
34	700	35	44	51	8.6	2	2	1	1
35	530	28	35	65	3.6	1	1	1	1
36	990	43.6	55.6	17	3.0	4	1	1	1
37	102	30.3	38	7	19.7	7	7	2	2
38	760	33	42	66	0	14	14	1	1
39	850	47	59	1	6.4	20	1	1	2
40	640	40	49.5	5	20.0	19	5	2	2

Table 28

RAW SUBSCALE SCORES ON BEHAVIORAL VARIABLES FOR THE SAMPLE

School I.D.	Disengagement	Hindrance	Esprit	Intimacy	Alloofness	Production Emphasis	Thrust	Consideration
1	18.03	12.99	27.43	16.43	20.17	18.87	27.14	13.14
2	16.52	11.95	25.90	17.81	17.77	11.37	28.72	16.75
3	18.44	12.77	26.58	15.73	20.27	18.38	27.55	12.04
4	19.09	12.84	25.32	16.68	20.36	19.29	27.01	12.41
5	18.74	11.92	28.69	16.34	17.74	14.79	19.07	14.04
6	16.72	10.42	29.27	17.63	19.90	16.72	27.07	14.75
7	18.16	11.73	27.48	16.57	17.09	11.86	15.14	11.41
8	16.93	10.00	27.33	14.65	19.95	16.91	23.58	14.00
9	18.90	11.72	26.32	15.25	18.45	15.15	21.17	12.07
10	18.87	10.30	30.76	18.00	19.42	16.00	24.00	11.54
11	19.83	15.67	22.25	14.29	22.54	19.13	19.71	22.61
12	16.68	13.04	33.04	18.69	19.04	17.50	28.04	14.01
13	20.50	13.76	25.35	16.94	20.47	17.38	15.91	9.82
14	17.79	12.18	29.90	17.00	18.46	15.10	25.95	14.01
15	17.86	13.21	29.21	16.39	19.61	15.11	28.21	14.04
16	20.80	12.80	25.00	14.95	20.95	18.65	26.00	14.00
17	18.11	13.69	26.78	15.08	18.58	13.08	21.04	11.04
18	20.74	12.93	25.52	17.07	18.26	14.00	11.02	14.04
19	24.21	13.00	25.00	18.43	18.86	18.00	11.01	14.04
20	17.73	13.25	27.65	14.05	21.13	18.81	24.96	14.04
21	18.37	13.91	27.45	15.73	18.09	15.45	25.21	14.01
22	16.34	10.97	29.22	16.22	19.22	15.94	20.00	14.04
23	11.29	14.91	27.74	16.63	18.80	18.37	20.07	14.01
24	20.21	14.61	27.85	17.61	19.79	17.73	14.10	14.02
25	17.71	11.52	30.87	17.00	16.83	12.64	20.04	14.01
26	15.24	10.88	27.32	17.52	19.64	16.44	21.04	14.01
27	20.30	14.49	24.64	16.30	19.40	17.43	14.04	14.01
28	19.69	11.17	19.85	15.39	14.71	14.02	20.05	14.01
29	16.74	10.77	25.11	15.03	19.94	14.01	15.00	14.04
30	16.37	11.21	26.74	15.95	20.05	14.05	14.03	14.01
31	16.19	11.52	25.52	16.48	19.00	15.62	14.10	14.04
32	17.77	12.15	26.38	15.69	19.00	18.92	15.04	14.01
33	17.70	13.81	27.40	15.69	19.90	12.76	17.04	9.84
34	17.13	11.71	29.11	16.79	17.89	13.11	27.32	14.01
35	18.44	12.53	30.12	18.72	19.36	14.96	25.07	14.04
36	18.63	13.92	27.59	16.14	18.95	13.67	25.07	14.04
37	17.69	10.81	27.06	16.63	18.81	16.75	24.38	14.12
38	15.45	12.14	29.55	15.68	19.82	14.36	17.14	14.04
39	17.18	13.52	27.32	15.16	20.42	15.52	21.74	14.04
40	16.00	11.30	28.67	16.76	19.91	17.73	27.00	14.04

B30167